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Flight Object Task Order

**Flight Object Data
Dictionary Batch #1 - FINAL**

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Flight Object Data Dictionary

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- **Document History**

Versi on	Date	Entered By	Description of changes
1.0	June 22, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Consolidated separate documents from Volpe and Booz Allen to create the first version of the Flight Object Data Dictionary
1.1	June 29, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Improved consistency between the Volpe-authored and the Booz Allen-authored sections (e.g., added consistent keywords, added more interface descriptions to Section 2.
1.2	June 30, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Rectified small inconsistencies (e.g., the capitalization and usage of the word "None") Added "ICAO Flight Plan" to the list of keywords wherever it was missing.
1.3	June 30, 2010	Laura Adams (Booz Allen Hamilton)	Refined text and consistency of the document.
1.4	July 19, 2010	Laura Adams & Rod Little (Booz Allen Hamilton)	Added Introduction Section, Methodology Section, Figure 1- System Interfaces, Section 4- Notional Conceptual Data Model. Grammar and formatting corrections.
1.5	July 21, 2010	Laura Adams (Booz Allen Hamilton)	Updated Figure 2- Notional Conceptual Data Model, corrected redundancy in Section 3. Distributed to FOWG for review.

Version	Date	Entered By	Description of changes
1.6	September 15, 2010	Cristian Ianculescu, Rod Little, Tim Reynolds (Booz Allen Hamilton)	<p>Consolidated second submissions from Volpe and Booz Allen</p> <p>Added "Purpose and Scope" section</p> <p>Moved metadata definitions to the beginning of document</p> <p>Added blank Data Element template</p> <p>Added Appendix A - Submission History</p> <p>Made several minor changes and corrections prompted by reviewer comments</p>
1.7	Oct 6, 2010	Cristian Ianculescu (Booz Allen Hamilton)	<p>Reformatted Appendix A to show a high-level revision history</p> <p>Made several changes to address review comments</p> <p>Made minor formatting fixes</p> <p>Added reference table developed by Matthew Hagen (TASC) as Appendix B</p>

- **Introduction**

1.1 Purpose and scope

This document was created to collect and catalogue the various Flight Data Elements that are currently exchanged within the NAS, with other ANSPs, and with the industry in general.

The development of the document will encompass several iterations, each building on the prior understanding, on operational perspectives applied to the Data Elements, and on data models developed for NextGen and specifically for the Flight Object.

Over time we will apply a process of normalization to these Data Elements, and the Flight Object Data Dictionary will eventually become the authoritative reference for the flight data available through the Flight Object.

1.2 The Flight Object

The Flight Object is defined as the medium for capturing and sharing the most up-to-date information on any flight throughout its lifecycle. It is a collection of common information data elements describing an individual flight and is available electronically for use by Air Navigation Service Providers, Government organizations and approved NAS operators/customers. The flight object concept is based on sharing these common flight data elements among new and existing capabilities as the NAS evolves. Sharing common data elements improves the accuracy and availability of flight information updates; the consistency of flight planning in different ATM system domains and the transition of flights between domains; and enhances the availability of operator preferences and recorded history information.

As such, the Flight Object aggregates and disseminates information related to flights in the form of Flight Data Elements (FDE), also referred throughout this document as Data Elements (DE). These Data Elements are produced by the various systems or air traffic participants throughout the National Airspace System (NAS), and are consumed by other systems or participants. Flight Data Elements vary from the simple to the complex, and usually represent different aspects of a flight (e.g., aircraft position fix, trajectory, flight plan).

The Flight Object attempts to optimize this transaction by facilitating the access to the most up-to-date values of the FDEs. There are several challenges in finding the appropriate FDEs to contribute to the FO:

1. There are very many FDEs produced by the various systems and users of the NAS. The volume of available data makes it difficult to understand what's relevant and what's not
2. The FAA is structured in distinct and fairly separate domains, and historically interoperability between domains has been limited. Many times, relevant

FDEs are not able to transcend domain barriers for technical and organizational reasons

3. Because of the domain separation, many FDEs have synonyms (data elements with the same meaning but different name), or homonyms (data elements with the same name but different meaning). The Flight Object will harmonize across domains and provide unique naming and meaning to flight data
4. Many DEs are not documented properly, at least not for cross-domain consumption. This encourages each domain re-creating Data Elements in their own flavor, instead of reusing a functionally identical Data Element from another domain

The exact methodology to determine which Data Elements belong to the Flight Object is not defined yet. The catalog of currently exchanges Data Elements combined with future operational views of the data and with rigorous modeling of the domain will lead to the development of a set of criteria and requirements. These will constitute the framework for assessing which data elements should be added to the Flight Object, which should be removed, and which should be modified or merged. The Flight Object criteria and requirements will provide an enduring governance tool for managing the lifecycle of the Flight Object.

1.3 Data Dictionary

This Data Dictionary defines and describes in a standardized format the metadata required to create a rich semantic context for the Flight Data Elements which are part of the Flight Object. The intent of this document is to provide an explanation for the assumptions and data model.

A data description which is standardized across domains allows all systems and users to agree on the structure (syntax) and meaning (semantics) of the data within the Flight Object. The Data Dictionary captures and documents these agreements. As a final product, this Data Dictionary will provide the reference syntactic and semantic description of the Flight Object Data Elements.

This Data Dictionary will enable the following essential Flight Object capabilities:

- **Data Discovery:** The ability to quickly and accurately identify and find data that supports mission requirements. This is possible through the means of uniformly describing Flight Object Data Elements, as well as through the categorization, search and query capabilities which must be built into the Flight Object
- **Data Reuse:** The ability to increase utilization of data in new and synergistic ways in order to innovatively and creatively support missions
- **Data Sharing:** The identification of data for sharing and exchange within and between all interested NAS systems, users, and air traffic participants

- **Data Entity Harmonization:** The capability to compare data artifacts across the NAS and international systems through a common, well-defined model that supports the harmonization of those artifacts and the creation of “common entities”
- **Semantic Interoperability:** Implementing information sharing between content owners has to contend with problems with different contexts and their associated meanings. Semantic interoperability is a capability that enables enhanced automated discovery and usage of data due to the enhanced meaning (semantics) that are provided for data

This document is currently in the first draft stage. It is meant to be used as a starting point for further refining the Flight Object data model.

• General Information About This Document

1.4 Notes

This Data Dictionary contains the description of a first batch of 139 Flight Object data elements documented by the Volpe Center and Booz Allen Hamilton. The final number of data elements in the Flight Object is not known at this time; however, the Flight Object will continue to evolve as the data requirements of the National Airspace System evolves. This document will be enhanced over time and eventually will contain the description of all data elements which make up the Flight Object.

Following are some additional notes on the contents of this document.

1. The elements are in alphabetical order by primary name. In subsequent version, this document will also include a logical organization based on the Flight Object conceptual model.
2. This version of the document does not include a glossary. Future versions will rectify this omission, and will capture entries such as: GDP, GS, TMI, pop-up flight, adaptive compression, slot credit substitution, ADL, CDM message, CDM participant, substitution, controlled flight, etc.
3. The keywords captured for each data element in the dictionary will be refined in subsequent iterations of this document. Their intent is to provide loose semantic coupling between data elements, and capture general context and institutional knowledge around the data elements.
4. In the current document most of the “Taxonomy”, “Disposition”, and “Access Restriction” fields were not populated. The “Taxonomy” information will be provided by the Flight Object conceptual model – which is currently under development. The “Disposition” of each data element will be approached later, with an eye towards the desired final-state Flight Object, rather than the current data retention. In some cases, specific data retention system rules were known and this field was populated. The “Access Restriction” field was populated for specific instances in which the business and systems rules governing distribution were known; however, the majority were not populated pending future business rule identification.

5. This version of the document discusses Flight Identification, Aircraft Identification, and Global Unique Identifier as separate data elements. This is because in today's NAS systems, these data elements are used, redundantly, to identify information for a particular flight. VOLPE is currently exploring the issue of unique identification as part of the Flight Object project, which may, at some point, supersede the use of redundant data elements that are used for flight identification.
6. The data elements in this document are legacy data elements; they are catalogued here as they exist in various systems across the NAS. Future version of this document will introduce a more normalized nomenclature for the data elements, more rigorously defined data types and formats, and linked to other information domains (e.g., AIXM).

1.5 Methodology

The data element definitions captured in this document were compiled from a number of Interface Control Documents (ICDs) which describe the interactions between the systems depicted in Figure 1. The following interfaces were considered:

CDM Messages – Messages sent from airspace users to TFMS to notify TFMS of planned flights, changes in plans, and actual flight events. These include Flight Create (FC), Flight Modify (FM), and Flight Cancel (FX).

ADL Files – Snapshots of flights for specific airports or FCAs sent from TFMS to airspace users for the purposes of monitoring demand at key locations and managing GDPs and AFPs.

GDP/AFP Data – Messages exchanged between TFMS and airspace users to monitor and manage flights controlled by GDPs, GSeS, and AFPs. These include slot lists, unsolicited messages, and substitutions.

TFMDI Data – Data describing current reroutes and FCAs provided from TFMS to airspace users.

SEVEN Messages – Messages exchanged between TFMS and airspace users to monitor and manage flights controlled by SEVEN TMIs. These include the trajectory option sets.

XFS Messages – Route amendments sent from TFMS to ERAM to apply required reroutes.

CMS Messages – Messages sent between Host (or more specifically Host/Air Traffic Management Data Distribution System – HADDs), and the Enhanced Traffic Management System (ETMS)

ASDI – The Aircraft Situation Display to Industry (ASDI) subsystem of the Enhanced Traffic Management System (ETMS) allows near real-time air traffic data to be disseminated to members of the aviation industry.

JCAB – Messages sent between TFMS and the Japanese Civil Aviation Bureau (JCAB) with the purpose of sharing Air Traffic Management data collaboratively.

ICAO Flight Plan – the ICAO 2012 Flight Plan data.

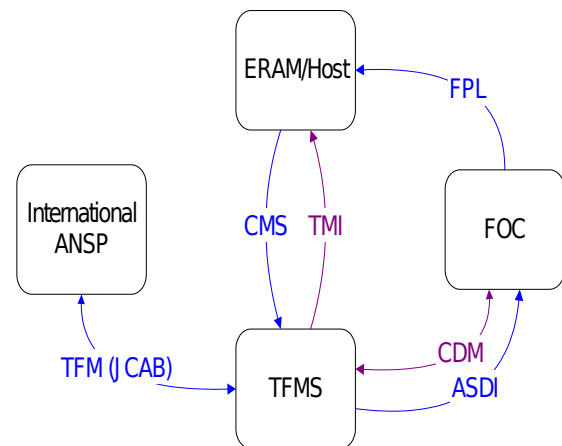


Figure 1- System Interfaces

1.6 References

The data element descriptions contain references to documents in which those data items are discussed. The references are provided using a short-hand description. Following are the full references for these documents.

The document referred to as “CDM Message Formats” is:

- Howard, K. “CDM Message Formats”, Version 2.2, November 3, 2005.

The document referred to as “ADL Description” is:

- Howard, Ken and Miro Lehky. “Aggregate Demand List (ADL) / FSM Broadcast Data Formats”, Version 11 Revision 4, September 12, 2006.

The document referred to as “ICD for GDPs and AFPs” is:

- FAA. “Interface Control Document for Substitutions during Ground Delay Programs, Ground Stops, and Airspace Flow Programs”, Version 3.1, March 19, 2007.

The document referred to as “SEVEN ICD” is:

- Howard, Ken. “Interface Control Document for SEVEN”, Version 1.1, May 3, 2010.

The document referred to as “JCAB ICD” is:

- FFA and JCAB. “Interface Control Document for FAA-JCAB Data Exchange”, Draft 0.4, R3, April, 2010.

The document referred to as “CMS ICD” is:

- FFA. “Enhanced Traffic Management System-to-ARTCC HOST Interface Device (HID) National Airspace System (NAS) Local Area Network (LAN) Interface Control Document (ICD) For Traffic Flow Management Infrastructure (TFMI)”, NAS-IC-24032410-14, June 2, 2006.

The document referred to as “ASDI ICD” is:

- Volpe Center. “Aircraft Situation Display To Industry: Functional Description and Interface Control Document”, Version 5.4, November 15, 2005.

The document referred to as “ICAO FPL” is:

- FAA. “International Flight Plan (FAA Form 7233-4)- IFR Flights (For Domestic or International Flights)”, September 30, 2006.

• Notional Conceptual Data Model

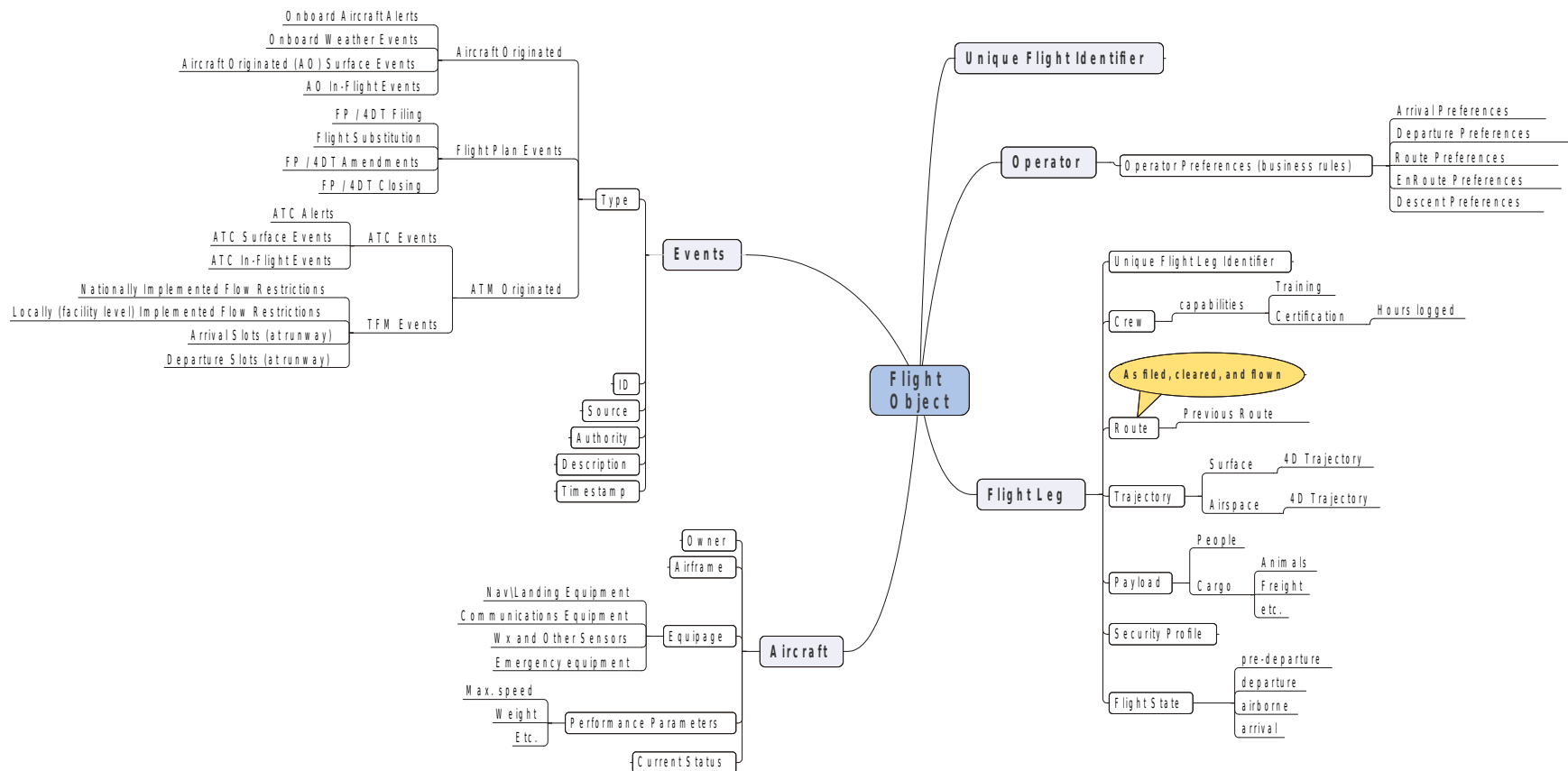


Figure 2- Notional Conceptual Data Model

- **Data Dictionary Entry Template**

The Flight Data Elements in this dictionary are captured in tables such as the one below. The rows and columns of this table contain information which describes the Data Element as completely as possible. The meaning of the metadata is described in the next section.

[Data Element Name]			
<u>Name</u>		<u>Taxonomy</u>	
<u>Synonyms</u>		<u>Keywords</u>	
<u>Description</u>			
<u>Has Parts</u>		<u>Is Part Of</u>	
<u>Creator</u>		<u>Source</u>	
<u>Contributors</u>	<u>Altering Events</u>		
<u>Audience</u>	<u>Data Usage</u>		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
<u>Example</u>			
031654			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
<u>Disposition</u>			<u>Mandatory</u>
<u>Requires</u>		<u>Is Required By</u>	
<u>References</u>			
<u>Data Transactions or Interfaces</u>			
<u>Notes</u>			

[Data Element Name]			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>

- **Metadata Definition**

1.7 Name

Specify a unique, descriptive name for the data element.

1.8 Taxonomy

The Taxonomy is an unambiguous reference to the Data Element. The syntax of the Identifier reflects the place of the data element in the Conceptual Model. For example, the data element which captures the maximum speed on an aircraft will have the following identifier: fo.Aircraft.PerformanceParameters.MaximumSpeed

This notation, while verbose, alleviates confusions about the identity of the data element to which “maximum speed” refers (maximum speed of the aircraft as opposed to the maximum speed allowed on a taxiway).

1.9 Synonyms

Use this field to capture all alternate terms, synonyms, and acronyms. If necessary, explain the fine distinctions between terms.

1.10 Keywords

Use keywords which describe the topic or subject of the data element. This metadata can be used to logically group elements, or create queries. [Create controlled vocabulary]

1.11 Description

Describe this data element. Once the reader studies this description, it should be clear to the reader exactly what this data element is. If necessary, give references to further clarifying documents. It is important that this description be clear and no longer than necessary.

1.12 Has Parts

Describe how the (complex) data element can be decomposed into a set of (simpler) data elements. The decomposition can be either physical or logical.

1.13 Is Part Of

If the data element is part of a more complex data element, indicate the name of the complex data element here.

1.14 Creator

Indicate which system (or process, organization, or actor) is the original creator of the data element. If the owner of the data element is different from the creator, make a note of it. The creator of the data element is considered the system that is the ultimate source of this data item; it provides this data items to other systems, which perhaps pass it on.

1.15 Source

The source of the data element is the system which first publishes it. The source and creator may be the same entity, but that is not always true.

1.16 Contributor

Contributors are entities which alter the data element by processing, augmenting, synthesizing, refining, combining, etc. All known contributors should be captured along with the specific modifications which they perform.

1.17 Altering Events

Indicate the events that cause this data item to change. This includes both the initial setting of the value and any later revision. Issue: The goal is to clearly distinguish who sets the data (the contributor captured in the Contributor metadata above, from the events that cause a value to be changed (the Altering Events).

1.18 Audience

List all the end users of the data (systems, organizations, and humans) and describe what they do with the data.

1.19 Data Usage

Explain briefly how this data element is used by its audience.

1.20 Data Type

Specify the nature or genre of the Data Element through a classification in the following categories: numbers, Booleans, characters, alphanumeric strings, complex structures. If the data element has a complex type and is not further decomposed in this data dictionary, the complex type shall be specified as a collection of simple data types (numbers, Booleans, characters, and alphanumeric strings).

1.21 Format

If the data type is not simple, or if the format in which the data is represented is important to understanding the data itself, capture there format here. If applicable, refer to another document that gives the format in full detail.

1.22 Unit of Measure

Indicate the unit of measure used to express the data element. If there are discrepancies in the unit of measure used by the population of producers / consumers of this data element, it should be noted here.

1.23 Value Range

Indicate the range of the values the data element might take using either a minimum and maximum pair of values, or an upper / lower threshold. Note any notable particularities related to the value range of the data element.

1.24 Example

Give one or two examples of the data element.

1.25 Access Restrictions

List any knowledge related to who can view or modify the data element and under which conditions. This information will be used later on to create the appropriate access controls.

.

1.26 Maturity

Indicate where this data element is in the following maturity progression: "planned", "provisional", "current", "retired", and "obsolete".

1.27 Accrual Method

Specify how the data element is acquired (e.g., manual entry by human, periodic update by systems). Capture here any thoughts on accrual policy.

1.28 Accrual Periodicity

Indicate when and how often data element instances are added to / updated in the Flight Object.

1.29 Disposition

Specify when and under what circumstances the data element instance should be disposed of. Any other thoughts about disposition policies are welcome here.

1.30 Mandatory

Indicate if this data element is required for a well formed Flight Object. Select either "Yes" or "No". Please note that a Flight Object might still be valid if it's not well formed (for example when the FO reflects the intent to fly, but not all details are available).

1.31 Requires

Indicate whether the data element requires additional information (e.g., other data elements) for it to be relevant / useful. Describe the full context of the dependency.

1.32 Is Required By

Indicate whether this data element is required by any other data element in order to provide contextual perspective. Describe the dependency.

1.33 References

Specify external documents which can help with understanding the data element, its context and its role.

1.34 Data Transactions / Interfaces

Capture all known transactions and / or interchanges in which this data element participates. A brief description should be sufficient unless the transaction is complicated, in which case refer to additional documents which explain the transaction.

1.35 Notes

Use this space to capture any information or knowledge that does not fit in any of the metadata above.

1.36 Version

Use this field to implement a version control system for the data elements.

1.37 Date

Capture the date the version change was made.

1.38 Author

Capture the name and affiliation of the person who made the version change.

1.39 Description of Changes

Describe briefly the nature of the change.

- **Data Elements**

1.40 Accepted By

Accepted by...			
Name		Taxonomy	
Accepted by		[TBD]	
Synonyms		Keywords	
Recipient acknowledgment		Acknowledgment , accepted by	
Description			
Indicates acceptance of the flight plan in the manner prescribed by the appropriate ATS authority; format to receive automatic acknowledgement (ACK) and/or rejection (REJ) messages			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation		Host/ERAM	
Contributors	Altering Events		
None	None		
Audience	Data Usage		
Airspace Users, ANSP	Acknowledgement of messages		
Data Type	Format	Units	Range
String of characters	Part 1: The three-letter NADIN address where the FPF would like the acknowledgement message sent, followed by an oblique stroke (XXX/); Part 2: The four-letter location identifier of the FAA Air Route Traffic Control (ARTCC) to which the FPL is addressed by the FPF (KZXX); and Part 3: A three-digit sequential message number assigned by the FPF (ddd).	n/a	n/a
Example			
AWE/KZHU004			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automatic /manual	Occasionnal
Disposition			Mandatory
[TBD]			Yes

Accepted by...			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
FAA Flight Plan Filing Reference Guide			
<u>Data Transactions or Interfaces</u>			
ICAO Flight Plan			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.41 Actual Departure Time

Actual Departure Time			
Name		Taxonomy	
Actual Departure Time		[TBD]	
Synonyms		Keywords	
Gate Departure Time, Actual Time of Departure (ATD)		actual, departure, time, ATD	
Description			
Actual departure time is the instance when automation detects that the aircraft has become airborne			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation		Host/ERAM	
Contributors	Altering Events		
None	None		
Audience	Data Usage		
Automation (TFMS/ERAM) Traffic Managers	Current status, and post ops analysis]		
Data Type	Format	Units	Range
String of numeric characters	(a) dddd – where the prefix character can be either “D” (departure), or “E” (active). The 4 numeric characters represent time in the format HHMM FAA-JCAB Data Exchange: yyyymmddhhmm	n/a	n/a
Example			
E 1525, 201006040823			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated	Once
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
NAS-MD-311, ICAO 4444, FAA-JCAB Data Exchange			

Actual Departure Time			
Data Transactions or Interfaces			
CMS messages (FHI), ASDI messages (DZ), JCAB messages (DEP)			
Notes			
Same as Estimated, Proposed and Flush Time reference page 783 of NAD MD 311; "E"			
Version	Date	Author	Description of Changes
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.42 Actual Gate Time of Arrival (AGTA)

Actual Gate Time of Arrival (AGTA)			
Name		Taxonomy	
Actual Gate Time of Arrival (AGTA)		[TBD]	
Synonyms		Keywords	
IN, T14		Gate, time, arrival, actual,	
Description			
The time at which a flight pulls in at the gate / stand as reported by a CDM Participant via a CDM message.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Updated when the flight arrives at the gate (using CDM FM message). Users may trigger their messages off of different physical events, such as the brake being set or the door being opened.		
Audience	Data Usage		
Airspace user Traffic manager	There is no current use for this data other than for display to the airspace user or traffic manager.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
031654			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	automated	Once per flight
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
ADL Description, CDM Message Formats			
Data Transactions or Interfaces			
CDM messages (FM), ADL files			

Actual Gate Time of Arrival (AGTA)

Notes

This is the same time that the airspace users submit to DOT for on-time reporting, but is provided in real-time.

This data is only available from CDM participants. Not all CDM participants currently provide this data in their CDM feeds.

This data could be used in the future for keeping track of how long flights are on the ground and not at the gate.

This data could be provided in the future by surface surveillance systems for airports with sensors in the ramp areas.

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Added "stand" to description

1.43 Actual Gate Time of Departure (AGTD)

Actual Gate Time of Departure (AGTD)			
Name		Taxonomy	
Actual Gate Time of Departure (AGTD)		[TBD]	
Synonyms		Keywords	
OUT, T13		Gate, time, departure, actual, leave, taxi	
Description			
The time at which a flight pushes out from the gate as reported by a CDM Participant via a CDM message.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Updated when the flight leaves at the gate (using CDM FM message). Users may trigger their messages off of different physical events, such as the brake being released or the door being closed.		
Audience	Data Usage		
TFMS Airspace user Traffic manager	Used to determine that a flight is in taxi status (off gate but not yet departed), which affects how flights are processed in GDPs and GSeS. Displayed to airspace users and traffic managers.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
031526			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	automated	Once per flight
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
ADL Description, CDM Message Formats			

Actual Gate Time of Departure (AGTD)			
<u>Data Transactions or Interfaces</u>			
CDM messages (FM), ADL files			
<u>Notes</u>			
<p>This is the same time that the airspace users submit to DOT for on-time reporting, but is provided in real-time.</p> <p>This data is only available from CDM participants. Not all CDM participants currently provide this data in their CDM feeds.</p> <p>This data could be used in the future for keeping track of how long flights are on the ground and not at the gate.</p> <p>This data could be provided in the future by surface surveillance systems for airports with sensors in the ramp areas.</p>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.

1.44 Actual Time of Arrival

Actual Time of Arrival			
Name		Taxonomy	
Actual Time of Arrival		[TBD]	
Synonyms		Keywords	
ATA		Actual, arrival, time	
Description			
For IFR flights, the time at which the aircraft arrived over a designated point, defined by reference aids, from which an instrument approach procedure commenced, or, if no navigation aid was associated with the aerodrome, the time at which the aircraft arrived over the aerodrome. For VFR flights, the time at which the aircraft arrived over the aerodrome.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation, Controller		HOST/ERAM	
Contributors	Altering Events		
None	None		
Audience	Data Usage		
Automation (ERAM/TFMS), Airspace user, Traffic Managers	Current status, and post ops analysis		
Data Type	Format	Units	Range
Alphanumeric characters	12 digits giving date-time in UTC yyyyymmddhhmm format	N/A	N/A
Example			
201009100231			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
FAA-ICAB Data Exchange			

Actual Time of Arrival			
Data Transactions or Interfaces			
FAA-JCAB Data Exchange: Flight Data Message			
Notes			
A “time of arrival” data element paired with the arrival type would simplify messaging, rather than having many different types of time of arrival data elements [e.g. Estimated Time of Arrival (ETA), Calculated Time of Arrival (CTA), Vertex Time of Arrival (VTA)]			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.45 Airborne Equipment Qualifier

Airborne Equipment Qualifier			
Name		Taxonomy	
Airborne Equipment Qualifier		[TBD]	
Synonyms		Keywords	
		ICAO Flight Plan, Communication, navigation, approach, equipment, qualifier	
Description			
Code identifying type of equipment on board aircraft.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace User		[Host/ERAM?]	
Contributors	Altering Events		
Airspace User	Initial FPL, and potential amendments if aircraft is changed		
Audience	Data Usage		
ANSP	Used for navigation and routing purposes, also to determine aircraft capabilities relating to meteorological conditions. Also used to determine what kind of instrument approaches the aircraft is capable of executing (e.g., PRM, cat III approaches).		
Data Type	Format	Units	Range
String of characters	L(L) (L)(24 optional letters A-Z)	n/a	n/a
Example			
S, SCHJ			
Access Restriction		Maturity	Accrual Method
[TBD]		Current	Automatic or manual
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
ICD NAS-IC-24032410-14			
Data Transactions or Interfaces			
Message Sets: ASDI, CMS, ICAB, ICAO FPL			

Airborne Equipment Qualifier

Notes

The ICAO 2012 Flight Plan format will change the format of the Airborne Equipment Qualifier. Ultimately, the Flight Object will define separate, dedicated, and unambiguous constants for all the qualifiers specified by ICAO.

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Added notes

1.46 Aircraft Category

Aircraft Category			
Name		Taxonomy	
Aircraft Category		[TBD]	
Synonyms		Keywords	
CTG		TFMS, ADL	
Description			
The category of the aircraft, that is, jet, prop, or turbo.			
Has Parts		Is Part Of	
n/a		n/a	
Creator		Source	
TFMS		TFMS	
Contributor s	Altering Events		
TFMS airspace user	Set when flight created based on the aircraft type. Can be modified by the user updating the aircraft type.		
Audience	Data Usage		
TFMS airspace user	Used to display to Traffic managers and airspace users. Used to filter flight displays, list reports, and FEA/FCAs in TFMS. Can be used to exclude flights in a GDP or AFP.		
Data Type	Format	Units	Range
alpha	L (one letter)	n/a	'J' for Jet, 'P' for Prop, or 'T' for Turbo
Example			
J, P, T			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	current	automated	Once, updated rarely
Disposition			Mandatory
			Yes
Requires		Is Required By	
Aircraft type		n/a	
References			
ADL Description			

Aircraft Category			
Data Transactions or Interfaces			
ADL lists			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.47 Aircraft Color and Markings

Aircraft Color and Markings			
Name		Taxonomy	
Aircraft Color and Markings		[TBD]	
Synonyms		Keywords	
None		ICAO Flight Plan, FPL, Aircraft, Color, markings, SPL, supplementary	
Description			
Aircraft color and markings.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
None	Amendments due to changes in the associated flight plan.		
Audience	Data Usage		
Search and rescue, law enforcement	Used to describe aircraft in case of emergency or loss of radio telephony. Visual identification for law enforcement, search and rescue, etc.		
Data Type	Format	Units	Range
String of characters	Free form text	N/A	N/A
Example			
White			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.			

Aircraft Color and Markings			
Data Transactions or Interfaces			
Information captured when flight plan filed, or amended. Information is read when transferred to search and rescue/law enforcement.			
Notes			
This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).			
Version	Date	Author	Description of Changes
1.0	May 13, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Added "SPL" and "supplementary" to "Keywords". Amended "altering events" and "data usage".

1.48 Aircraft Data

Aircraft Data			
Name		Taxonomy	
Aircraft Data		[TBD]	
Synonyms		Keywords	
None		Flight plan, aircraft, number, wake, turbulence, category, type, navigation, surveillance, characteristics, performance, capability, navigation	
Description			
A set of data that specifies aircraft assigned to a particular flight. It includes the aircraft type (e.g., B757), as well as characters specifying variations of avionics or equipment that affect performance.			
Has Parts		Is Part Of	
Number of aircraft (optional) Wake turbulence category Aircraft type Navigation and surveillance equipment (optional)		Flight plan	
Creator		Source	
Airspace user		Prior to the flight plan being filed, TFMS is the source of the current Aircraft Data. After a flight plan is filed, ERAM is the source.	
Contributors	Altering Events		
Airspace user	Defined when flight first created. Modified whenever there is a change to the aircraft is assigned to make the flight.		
Audience	Data Usage		
Airspace users Traffic managers Controllers Many systems (TFMS, ERAM, TMA, STARS, CARTS)	Identifies significant characteristics related to aircraft performance and capability, e.g., type indicates climb performance, equipment type indicates navigation capability. Used to model trajectories, determine separation requirements, and determine impact on capacity.		
Data Type	Format	Units	Range
complex	n/a	n/a	n/a
Example			
T6, B727, H/B747, B757/A, 4T/DC10/B, B744/H-SDGHIJRWXYZ/SD			

Aircraft Data			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automated	Defined when flight first created, updated rarely.
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Numerous, such as NAS-MD-311, ICAO 4444			
<u>Data Transactions or Interfaces</u>			
OAG download CDM messages (FC, FM, FX) CMS messages (FH, AH, DH, etc.)			
<u>Notes</u>			
There are significant format differences between ICAO format and the traditional NAS format. In the ICAO FPL, this data is broken down into its parts (number of aircraft, wake turbulence category, aircraft type, navigation equipment, and surveillance equipment).			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen)	Modified Data Type from “compound” to “complex”

1.49 Aircraft Identification

Aircraft Identification			
Name		Taxonomy	
Aircraft Identification		[TBD]	
Synonyms		Keywords	
ACID, Flight Identification, Flight ID, Flight Number, Call sign, ETMSID, FID, IDENT		ICAO Flight Plan, FPL, aircraft, identification, ID, registration number, N number, tail number	
Description			
<ul style="list-style-type: none">A group of letters, figures or a combination thereof which is either identical to, or the coded equivalent of, the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications [ICAO 4444].The registration marking of the aircraft (e.g. EIAKO, 4XBCD, N2567GA) when: (1) In radiotelephony, the call sign to be used by the aircraft will consist of this identification alone (e.g. OOTEK), or preceded by the ICAO telephony designator for the aircraft operating agency (e.g. SABENA OOTEK); (2) The aircraft is not equipped with radio [ICAO 4444, Appendix 2]The ICAO designator for the aircraft operating agency followed by the flight identification (e.g. KLM511, NGA213, JTR25) when in radiotelephony the call sign to be used by the aircraft will consist of the ICAO telephony designator for the operating agency followed by the flight identification (e.g. KLM511, NIGERIA213, HERBIE 25) [ICAO 4444, Appendix 2]			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Aircraft operator		Host/ERAM	
Contributors	Altering Events		
Aircraft operator, Air traffic controller	<ul style="list-style-type: none">An aircraft operator submits the Aircraft Identification when filing or amending a flight planATC can submit the aircraft identification when filing or amending a flight plan		
Audience	Data Usage		
All airspace users and systems.	Used in nearly all communications (in various forms) to address an aircraft or identify a flight.		
Data Type	Format	Units	Range
String of alphanumeric characters	Up to seven characters	n/a	n/a

Aircraft Identification			
Example			
EIAKO, 4XBCD, N2567GA, KLM511, NGA213, JTR25			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.			
Data Transactions or Interfaces			
All flight specific data transactions			
Notes			
This data element is currently used interchangeably with “Flight Identification”. While current systems do not delineate between the two, they are distinct data elements in a one-to-one relationship for the duration of a flight. The Flight Object most likely will keep both, with the “Aircraft Identification” being closer aligned with the registration number, while the “Flight Identification” will resemble the current GUF/ITUF.			
Version	Date	Author	Description of Changes
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.50 Aircraft Position

Aircraft Position	
<u>Name</u>	<u>Taxonomy</u>
Aircraft Position	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
Track Position	Aircraft, position, track information
<u>Description</u>	
Aircraft position sent by the Host Computer System every 12 seconds	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
Automation	Host/ERAM
<u>Contributors</u>	<u>Altering Events</u>
Automation	Modified by Automation every 12 seconds based on surveillance information
<u>Audience</u>	<u>Data Usage</u>
Airspace users , Traffic managers, Controllers, Many systems (TFMS, ERAM, TMA, STARS, CARTS)	Used to gain situational awareness and display aircraft position

Aircraft Position			
Data Type	Format	Units	Range
String of alphanumeric characters	ddddddL/dddddddL where: dddddd – Latitude where the first two digits are degrees, the second two are minutes, and the last two are seconds. Values for L are “N” or “S”. dddddd – Longitude where the first three digits are degrees, the second two are minutes, and the last two are seconds. Values for L are “E” or “W”. -or ad(d)(d)(d)/ad(d)(d)(d) for the position expressed as a pair of X,Y coordinates relative to the grid utilized by Host and HADDs.	n/a	n/a
Example			
770412N/0450525W			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Frequent
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
ICD NAS-IC-24032410-14			
Data Transactions or Interfaces			
CMS message (TH)			
Notes			
In the CMS TH interface, this data element appears twice, once as a latitude / longitude, and once in X, Y coordinates. For the purposes of the FO, the latitude/longitude should suffice.			
Version	Date	Author	Description of Changes
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.51 Aircraft Type

Aircraft Type			
Name		Taxonomy	
Aircraft Type		[TBD]	
Synonyms		Keywords	
Type, A/C type, equipment type		ICAO Flight Plan, FPL, aircraft, airplane, type, equipment	
Description			
Specification of the type of aircraft assigned to a particular flight.			
Has Parts		Is Part Of	
None		Aircraft data	
Creator		Source	
Airspace user		Prior to the flight plan being filed, TFMS is the source of the current Aircraft Type. After a flight plan is filed, ERAM is the source.	
Contributors	Altering Events		
Airspace user	Defined when flight first created. Modified whenever there is a change to the aircraft assigned to the flight.		
Audience	Data Usage		
Airspace users Traffic managers Controllers Many systems (TFMS, ERAM, TMA, STARS, CARTS)	Identifies significant characteristics related to aircraft performance and capability, e.g., type indicates climb performance, equipment type indicates navigation capability. Used to model trajectories, determine separation requirements, and determine impact on capacity.		
Data Type	Format	Units	Range
alphanumeric	2-4 characters	n/a	n/a
Example			
T6, B727, B747, B757, DC10			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Defined when flight first created, updated rarely.
Disposition			Mandatory
[TBD]			Yes

Aircraft Type			
<u>Requires</u>		<u>Is Required By</u>	
None		A required field in many CDM and CMS messages.	
<u>References</u>			
Numerous, such as NAS-MD-311, ICAO 4444			
<u>Data Transactions or Interfaces</u>			
OAG download CDM messages (FC, FM, FX) CMS messages (FH, AH, DH, etc.)			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.52 Airline Gate Time of Arrival (LGTA)

Airline Gate Time of Arrival (LGTA)			
Name		Taxonomy	
Airline Gate Time of Arrival (LGTA)		[TBD]	
Synonyms		Keywords	
Predicted Gate Arrival Time		Gate, time, arrival, airline	
Description			
Time the flight will pull up to the arrival gate, as estimated by the airspace user (e.g., airline). Sent to TFMS using CDM messages.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Provided when creating a flight in TFMS. Updated whenever time changes.		
Audience	Data Usage		
TFMS	May be used to set the Initial Gate Time of Arrival, which is used to compute GDPs. Used by TFMS as the earliest arrival time if ERTA and LRTA are not available.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	n/a
Example			
101227, 052335			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated or manual	May be provided when flight created in TFMS. May be updated occasionally.
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
Always paired with LGTD		Must appear on FC, or an FM that creates a flight.	

Airline Gate Time of Arrival (LGTA)			
References			
CDM Message Formats, ADL Description			
Data Transactions or Interfaces			
CDM messages, ADL files			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.53 Airline Gate Time of Departure (LGTD)

Airline Gate Time of Departure (LGTD)			
Name		Taxonomy	
Airline Gate Time of Departure (LGTD)		[TBD]	
Synonyms		Keywords	
Predicted Gate Departure Time		Gate, time, departure, airline	
Description			
Time the flight will push back from the departure gate, as estimated by the airspace user. Sent to TFMS using CDM messages.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Provided when creating a flight in TFMS. Updated whenever time changes.		
Audience	Data Usage		
TFMS	May be used by TFMS to model the ETD, ETA and flight trajectory. If the flight is not active and the airspace user has not provide a predicted runway departure time, TFMS uses the LGTD as the starting point for modeling ETD, ETA, and all other flight events. Used by TFMS as the earliest departure time if ERTD and LRTD are not available.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	Valid date and time
Example			
101227, 052335			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated or manual	May be provided when flight created in TFMS. May be updated occasionally.
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
Always paired with LGTA		Must appear on FC, or an FM that creates a flight	

Airline Gate Time of Departure (LGTD)			
<u>References</u>			
CDM Message Formats, ADL Description			
<u>Data Transactions or Interfaces</u>			
CDM messages, ADL files			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.54 Airline Runway Time of Arrival (LRTA)

Airline Runway Arrival Time (LRTA)			
Name		Taxonomy	
Airline Runway Arrival Time (LRTA)		[TBD]	
Synonyms		Keywords	
Predicted Runway Arrival Time		Runway, time, arrival, airline	
Description			
The predicted time of runway arrival (touch-down) as provided by the airspace user. Sent to TFMS using CDM messages.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Can be provided when creating a flight in TFMS or can be updated by the airline in subsequent CDM messages. Once a Predicted Runway Arrival Time has been provided, the airspace user is obligated to update it anytime it changes; for example, if an aircraft departure is delayed due to a mechanical problem, the airline must send the new predicted departure and arrival times.		
Audience	Data Usage		
TFMS	Used by TFMS to create the ETA unless the flight is active. Used by TFMS to set the earliest arrival time if ERTA is not available.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
210957			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	automated	occasional
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
Must be paired with LRTD.		None	
References			
CDM Message Formats, ADL Description			

Airline Runway Arrival Time (LRTA)			
<u>Data Transactions or Interfaces</u>			
CDM messages (FC, FM, FX), ADL files			
<u>Notes</u>			
The LRTA is sometimes used to set the ETA. However, the ETA has a much broader scope and should be kept as a separate field.			
	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.

1.55 Airline Runway Time of Departure (LRTD)

Airline Runway Time of Departure (LRTD)			
Name		Taxonomy	
Airline Runway Time of Departure (LRTD)		[TBD]	
Synonyms		Keywords	
Predicted Runway Departure Time		Runway, time, departure, airline	
Description			
The predicted time of runway departure as provided by the airspace user. Sent to TFMS using CDM messages. This estimate is different from the Estimated Time of Departure (ETD), which is the best estimated runway departure time, as computed by TFMS considering all available data sources.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
airspace user		TFMS	
Contributors	Altering Events		
airspace user	Can be provided when creating a flight in TFMS or can be updated by the airline in subsequent CDM messages. Once a predicted runway departure time has been provided, the airline is obligated to update it anytime it changes; for example, if an aircraft is delayed due to a mechanical problem, the airline must send the new predicted departure time.		
Audience	Data Usage		
TFMS	Used by TFMS to create the ETD unless there is a later CTD or the flight is active. Used by TFMS (FSM) as the earliest departure time if ERTD and LGTD unavailable.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
210957			
Access Restriction		Maturity	Accrual Method
[TBD]		Current	automated
Accrual Periodicity			Mandatory
Disposition			
[TBD]			no
Requires		Is Required By	
Must be paired with LRTA		None	

Airline Runway Time of Departure (LRTD)			
References			
CDM Message Formats, ADL Description			
Data Transactions or Interfaces			
CDM messages (FC, FM, FX), ADL files			
Notes			
The LRTD is sometimes used to set the ETD. However, the ETD has a much broader scope and should be kept as a separate field.			
Version	Date	Author	Description of Changes
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Augmented description to differentiate from Estimated Time of Departure.

1.56 Airways

Airways			
Name		Taxonomy	
Airways		[TBD]	
Synonyms		Keywords	
		Airways, predicted, trajectory	
Description			
Current prediction of the airways along the trajectory of a flight, where these predictions are based on all the information available to TFMS.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS generates an RT message for a flight under a variety of circumstances, with the most common being the receipt of an FS, FZ, or UZ message on that flight. (An FS message is an internal message that TFMS generates when a flight in the Official Airline Guide is loaded into the active TFMS databases; this typically happens twenty-four hours before the flight is scheduled to depart.)		
Audience	Data Usage		
TFMS, airspace user, ERAM	Metering, flow control, capacity management.		
Data Type	Format	Units	Range
Array of bytes (binary data)	6 bytes per array entry	n/a	n/a
Example			
[TBD]			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	automated	Occasional (see “Altering Events”)
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
None		None	
References			
Aircraft Situation Display To Industry: Functional Description and Interface Control Document (ver. 5.4)			

Airways			
Data Transactions or Interfaces			
ASDI message (RT)			
Notes			
This data element should be renamed "Predicted airways"			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.57 Alternate Airports

Alternate Airports			
Name		Taxonomy	
Alternate Airports		[TBD]	
Synonyms		Keywords	
alternate aerodrome		Alternate, airport, aerodrome, field 16 FPL	
Description			
An aerodrome to which an aircraft may proceed when it becomes either impossible or advisable to proceed to or to land at the aerodrome of intended landing. Alternate aerodromes include a Take-off alternate, an En-Route alternate, and a Destination alternate. The ICAO flight plan requires an alternate aerodrome, and a 2 nd alternate aerodrome.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		HOST/ERAM	
Contributors	Altering Events		
Airspace user, Controller	Amendment to flight plan.		
Audience	Data Usage		
TFMS, ERAM	Airspace user and ANSP contingency planning		
Data Type	Format	Units	Range
String of characters	ICAO 4444: ICAO 4 letter location for each alternate aerodrome (LLLL) separated by spaces NAS-IC-24032410-14: 2-25 characters	N/A	N/A
Example			
LFBD			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once via flight plan, subsequently updated via flight plan amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Alternate Airports			
References			
ICAO 4444 NAS-IC-24032410-14			
Data Transactions or Interfaces			
ICAO 4444: Item #16 on the ICAO FPL. NAS-IC-24032410-14: Flight Plan Information Message (FH), Flight Amendment Information Message (AH), ICAO Associated Data Information Message (HI), ICAO Amended Associated Data Information Message (HJ), RDB Flight Plan Information Message (FHI)			
Notes			
ICAO 4444: If no location indicator has been assigned to the alternate aerodrome, INSERT ZZZZ and SPECIFY in item #18 (of the ICAO FPL) the name of the aerodrome, preceded by ALTN/			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.58 Alternate Beacon Code

Alternate Beacon Code			
Name		Taxonomy	
Alternate Beacon Code		[TBD]	
Synonyms		Keywords	
None		Beacon, code, squawk, transponder, VFR, IFR, radar, secondary	
Description			
[?]			
Has Parts		Is Part Of	
None		None	
Creator		Source	
ANSP		[Host/ERAM?]	
Contributors	Altering Events		
[?]	[?]		
Audience	Data Usage		
[?]	[?]		
Data Type	Format	Units	Range
String of numeric (octal) characters	4 octal characters — dddd	N/A	[0,7] (each character)
Example			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	[?]	[?]	[?]
Disposition			Mandatory
[TBD]			[?]
Requires		Is Required By	
None		None	
References			
ICD NAS-IC-24032410-14, NAS-MD-315			
Data Transactions or Interfaces			
Message Sets: CMS			
Notes			

Alternate Beacon Code			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.59 Arrival Fix

Arrival Fix			
<u>Name</u>		<u>Taxonomy</u>	
Arrival Fix		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
AFIX		TFMS, ADL	
<u>Description</u>			
The name of the arrival fix as determined by ETMS modeling.			
<u>Has Parts</u>		<u>Is Part Of</u>	
n/a		n/a	
<u>Creator</u>		<u>Source</u>	
TFMS		TFMS	
<u>Contributor s</u>	<u>Altering Events</u>		
Airspace user Traffic manager	TFMS sets the arrival fix based on the modeled route of flight. Airspace users can cause the AFIX to change by filing a modified flight plan. A reroute issued by a traffic manager could also change the AFIX.		
<u>Audience</u>	<u>Data Usage</u>		
TFMS airspace user	Used to display to Traffic managers and airspace users. Used to compute arrival fix loads.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
alpha	LLL[LL] (3 - 5 letters)	n/a	valid arrival fix name
<u>Example</u>			
ROBRT, FINKS			
<u>Access Restriction</u>		<u>Maturity</u>	<u>Accrual Method</u>
		current	automated
<u>Disposition</u>			<u>Accrual Periodicity</u>
			rare
			<u>Mandato ry</u>
			no
<u>Requires</u>		<u>Is Required By</u>	
n/a		EAFT	

<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL lists			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.60 Arrival Slot

Arrival Slot	
<u>Name</u>	<u>Taxonomy</u>
Arrival Slot	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
ASLOT, assigned arrival slot, slot.	Arrival, slot, airspace, capacity
<u>Description</u>	
The portion of an airport or airspace capacity that is assigned to a flight as part of a TMI such as a GDP or AFP. An Arrival Slot specifies when a flight should arrive at an airport (GDP) or enter/cross an FCA (AFP). Arrival Slots that are not assigned to flights and are therefore available for use are called Unassigned Slots.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
TFMS, in almost all cases. Airspace user, very rarely.	TFMS
<u>Contributors</u>	<u>Altering Events</u>
TFMS Airspace users Traffic managers	<p>Usually created when TFMS computes a GDP or AFP (includes both new and revised programs).</p> <p>Can be created when TFMS processes a pop-up flight in a GDP or AFP.</p> <p>Modified when TFMS (Adaptive Compression) moves flights to prevent an arrival slot from going unused.</p> <p>Modified when TFMS responds to a Slot Credit Substitution request from an airspace user.</p> <p>Modified when airspace user substitutes controlled flights into new arrival slots.</p> <p>Modified by traffic manager in response to a request (white hat) from an airspace user.</p> <p>Very rarely created by airspace user using the Slot Create message.</p>

Arrival Slot			
<u>Audience</u>	<u>Data Usage</u>		
TFMS Airspace users Traffic managers QA	TFMS uses Arrival Slot along with ETA to monitor whether a flight is going to miss its slot, and then to adjust flights accordingly (Adaptive Compression). Traffic managers use Arrival Slot along with ETA to monitor the effectiveness of a GDP or AFP. If too many flights are going to miss their slots, a traffic manager might revise the TMI. Airspace users use Arrival Slots along with EDCTs and CTAs to determine what their opportunities are for substituting flights in a GDP or AFP. For example, if a NAS sees that a flight is going to be too late to hit its ASLOT, it might move another flight earlier into that slot. QA analysts look at arrival slots and actual arrival times to determine how well a program worked.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String	Controlled element name, period, day-hour-minute (ddhhmm) of slot, and one-letter suffix.	n/a	Valid date and time
<u>Example</u>			
BOS.171615A, FCAA01.012358B			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
Airspace users do not want control times going to general public.	Current	Automated	Created once, changed occasionally for flights in GDP or AFP.
<u>Disposition</u>			<u>Mandatory</u>
If a GDP or AFP is purged before a flight departs, the ASLOT is deleted at that time.			No
<u>Requires</u>		<u>Is Required By</u>	
A flight with an Arrival Slot must also have an EDCT, CTA, control element, exempt status, and hold flag. This is known as a controlled flight.		None	
<u>References</u>			
ICD for GDPs and AFPs, CDM Message Formats			
<u>Data Transactions or Interfaces</u>			
GDP/AFP messages, ADL files			
<u>Notes</u>			
An Arrival Slot is always accompanied by a CTA. The time in the Arrival Slot is usually, but not always, the same as the CTA.			

Arrival Slot			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.

1.61 Assigned

Assigned			
<u>Name</u>		<u>Taxonomy</u>	
Assigned		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
none		SEVEN, TFMS	
<u>Description</u>			
Flag indicating that a particular entry in the Trajectory Options Set (TOS) has been assigned to the flight by TFMS. This is assigned based on the lowest cost, feasible option.			
<u>Has Parts</u>		<u>Is Part Of</u>	
n/a		n/a	
<u>Creator</u>		<u>Source</u>	
TFMS		TFMS	
<u>Contributor s</u>	<u>Altering Events</u>		
TFMS Traffic manager	A trajectory option is assigned for each flight in a SEVEN TMI each time the TMI is recomputed. The airspace user (flight operator) may submit updated TOSes based on substitutions made, or routes that are no longer viable. This may cause TFMS to assign a new trajectory to the flight.		
<u>Audience</u>	<u>Data Usage</u>		
Airspace user TFMS	Tells the flight operator which route to file for the flight. Used by TFMS to determine which route to model a flight on for monitor/alert.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
[TBD]	[TBD]	n/a	
<u>Example</u>			
[TBD]			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
	planned	automated	Occasional
<u>Disposition</u>			<u>Mandat ory</u>
			No
<u>Requires</u>		<u>Is Required By</u>	
none		none	
<u>References</u>			
Interface Control Document for SEVEN			

Assigned			
<u>Data Transactions or Interfaces</u>			
SEVEN messages			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.62 Assigned Altitude

Assigned Altitude			
Name		Taxonomy	
Assigned Altitude			
Synonyms		Keywords	
Block or discrete altitude		Altitude, assigned	
Description			
Cruise altitude reflected in the Flight Plan cleared by Air Traffic Control, or block of assigned altitudes (i.e., he aircraft is assigned a block of altitudes; the first given is the lower altitude and the second is the upper)			
The block altitude is an altitude assignment that permits an aircraft to operate between upper and lower limits.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Controller		Host / ERAM	
Contributors	Altering Events		
Controller	Amendment to the flight plan		
Audience	Data Usage		
ATC, airspace user, TFMS	ATC operation (JO 7110.65T)		
Data Type	Format	Units	Range
String of characters	(d)dd – single altitude (d)ddB(d)dd – block of altitudes	Hundreds of feet	n/a
Example			
330, 320B340			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or automated	Once when the FPL is cleared and subsequently updated through FPL amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Assigned Altitude			
References			
ASDI Functional Description and Interface Control Document Version 5.4ICD			
Data Transactions or Interfaces			
ASDI message (FZ), CM message (AH, HU, FH, FHI)			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.63 ASSIGNED_RTE

ASSIGNED_RTE			
<u>Name</u>		<u>Taxonomy</u>	
ASSIGNED_RTE		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
Assigned Route		TFMDI, TFMS	
<u>Description</u>			
A route assigned to a flight as part of a reroute traffic management initiative. A flight can have more than one assigned route.			
<u>Has Parts</u>		<u>Is Part Of</u>	
Route elements (fixes, airways etc.)		none	
<u>Creator</u>		<u>Source</u>	
Traffic Manager		TFMS	
<u>Contributor s</u>	<u>Altering Events</u>		
Traffic Manager	Created when a reroute is issued for a flight. Can be modified by the traffic manager if the reroute is edited.		
<u>Audience</u>	<u>Data Usage</u>		
TFMDI users (airlines etc.) Traffic Managers	Identifies an assigned route. Users are supposed to file and follow assigned routes. Reroute monitor compares assigned routes to current field routes to determine reroute conformance. Traffic managers at the TMUs monitor reroute conformance and put flights on their assigned routes if the users do not file them.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
string	A list of route elements (fixes, airways etc.) separated by spaces.	n/a	Up to 1024 characters.
<u>Example</u>			
<CTR_ASSIGNED_RTE>ROD MIE SHM TARNE1</CTR_ASSIGNED_RTE>			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	current	assigned	rarely
<u>Disposition</u>			<u>Mandator y</u>
Exists until reroute expires or is cancelled or flight is disposed of.			No
<u>Requires</u>		<u>Is Required By</u>	
ASSIGNED_RTE_TYPE		none	
<u>References</u>			
[TBD]			

ASSIGNED RTE			
<u>Data Transactions or Interfaces</u>			
TFMDI data exchanges.			
<u>Notes</u>			
n/a			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 6, 2010	Michael Harris (Volpe)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Enhanced "altering events"

1.64 ASSIGNED_RTE_TYPE

ASSIGNED_RTE_TYPE			
Name		Taxonomy	
ASSIGNED_RTE_TYPE		[TBD]	
Synonyms		Keywords	
Assigned Route Type		TFMDI, TFMS	
Description			
Route type of one of a flight’s assigned (proposed) routes. A flight can have more than one assigned route.			
Has Parts		Is Part Of	
none		none	
Creator		Source	
Traffic Manager		TFMS	
Contributors	Altering Events		
Traffic Manager	Created when a reroute is created by a traffic manager.		
Audience	Data Usage		
TFMDI users (airlines etc.)	Identifies the route type of an assigned route (see below). Use by Reroute Monitor to determine whether reroute conformance should be checked (does so if type is “NONE”).		
Data Type	Format	Units	Range
string	tagged data element: <ASSIGNED_RTE_TYPE>data</ASSIGNED_RTE_TYPE>	n.a.	One of: NONE, CDR RTE, RERTE, UNKN RTE, UPT RTE
Example			
<ASSIGNED_RTE_TYPE>CDR RTE </ASSIGNED_RTE_TYPE>			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	current	assigned	once
Disposition			Mandatory
Exists until reroute expires or is cancelled or flight is disposed of.			No
Requires		Is Required By	
None		ASSIGNED_ROUTE	
References			
[TBD]			

ASSIGNED RTE TYPE			
<u>Data Transactions or Interfaces</u>			
TFMDI data exchanges.			
<u>Notes</u>			
n/a			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 6, 2010	Michael Harris (Volpe)	Initial version for review.

1.65 Baseline Entry (BENTRY)

Baseline Entry (BENTRY)			
Name		Taxonomy	
Baseline Entry (BENTRY)		[TBD]	
Synonyms		Keywords	
Baseline Element Entry Time		Baseline, entry, predicted, time, BENTRY, element	
Description			
BENTRY is a record of the predicted Entry time prior to either a GDP or AFP being issued for the flight or the flight departing - although BENTRY is most relevant to AFPs. . BENTRY can be used to compute the amount of departure delay that can be attributed to an AFP. BENTRY includes any time-out delay modeled by TFMS prior to the flight being controlled or the flight departing. BENTRY is specific to a particular FEA/FCA, and is computed for FEAs/FCAs that are designated in TFMS as “FSM-eligible”. Every flight that is projected to intersect an FEA/FCA is assigned a BENTRY time. A flight can have multiple BENTRY times.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	If a new flight is created that intersects an FSM-eligible FCA, or if an FSM-eligible FCA is created that intersects a flight path for a planned flight, TFMS computes the initial BENTRY for that flight. If a new flight plan or other flight data is processed that change the predicted flying time to the FCA, or if the predicted departure time changes, and the flight is not active or controlled by an AFP, TFMS updates the BENTRY for that flight and FCA. When TFMS re-models a departure time due to a “time-out” delay, the BENTRY is updated to the new ENTRY time.		
Audience	Data Usage		
TFMS, Airspace users	Used to compute AFP delay statistics both during an event and for post-analysis.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
280944			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Occasionally

Baseline Entry (BENTRY)			
<u>Disposition</u>			<u>Mandatory</u>
Exists until the flight is no longer affected by the FEA/FCA, or the FEA/FCA is disposed of, or the flight is disposed of.			No
<u>Requires</u>		<u>Is Required By</u>	
Must be associated with an FEA or FCA.		[None?]	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
BENTRY is the entry time to a specific FCA or FEA, therefore if we capture this, we also need to capture the FCA name.			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.
1.1	Oct 7, 2010	Michael Harris (Volpe)	Enhanced description. Added “Airspace users” to the “Audience” field.

1.66 Baseline Estimated Time of Arrival (BETA)

Baseline Estimated Time of Arrival (BETA)				
Name		Taxonomy		
Baseline Estimated Time of Arrival (BETA)		[TBD]		
Synonyms		Keywords		
Baseline ETA		Baseline, estimated, time, arrival, BETA		
Description				
BETA is a record of the ETA prior to either a GDP or AFP being issued or the flight departing. The BETA is used to compute the amount of arrival delay that can be attributed to the GDP. The BETA includes any time-out delay modeled by ETMS.				
Has Parts		Is Part Of		
None		None		
Creator		Source		
TFMS		TFMS		
Contributors	Altering Events			
TFMS	When a flight is first created, the BETA is set to the initial ETA. When an ETA is updated from an FS, FC, FM, or FZ, message, and if the flight is not controlled or active, the BETA is set to the new ETA. When TFMS re-models a departure time due to a “time-out” delay, the BETA is updated to the new ETA.			
Audience	Data Usage			
TFMS	Used to compute GDP delay statistics both during an event and for post-analysis.			
Data Type	Format	Units	Range	
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date & time	
Example				
131922, 121836				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
None		Current	Automated	Occasionally
Disposition				Mandatory
[TBD]				Yes
Requires		Is Required By		
None		None		
References				
ADL Description				

Baseline Estimated Time of Arrival (BETA)			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.67 Baseline Estimated Time of Departure (BETD)

Baseline Estimated Time of Departure (BETD)			
Name		Taxonomy	
Baseline Estimated Time of Departure (BETD)		[TBD]	
Synonyms		Keywords	
Baseline ETD		Baseline, estimated, time, departure, BETD	
Description			
BETD is a record of the ETD prior to either a GDP or AFP being issued or the flight departing. The BETD is used to compute the amount of departure delay that can be attributed to a TMI. The BETD includes any time-out delay modeled by ETMS.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	When a flight is first created, the BETD is set to the initial ETD. When an ETD is updated from an FS, FC, FM, or FZ, message, and if the flight is not controlled or active, the BETD is set to the new ETD. When TFMS re-models a departure time due to a “time-out” delay, the BETD is updated to the new ETD.		
Audience	Data Usage		
TFMS Airspace user Traffic manager	Used to compute GDP delay statistics both during an event and for post-analysis.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date & time
Example			
131922, 121836			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Occasionally
Disposition			Mandatory
[TBD]			No

Baseline Estimated Time of Departure (BETD)			
<u>Requires</u>		<u>Is Required By</u>	
None		BENTRY	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.68 Beacon Code

Beacon Code			
Name		Taxonomy	
Beacon Code		[TBD]	
Synonyms		Keywords	
None		Beacon, code, squawk, transponder, VFR, IFR, radar, secondary	
Description			
Code assigned by the ANSP prior to departure, or at the initiation of radar tracking. The SSR transmits an interrogation. When the aircraft receives the interrogation, the aircraft transponder will send a reply with important information such as altitude, and identity (Beacon Code). Beacon codes can be sent to Host but not necessarily. Sometimes the Beacon Code is local to the ATC controlling facility.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
[ANSP - more specific?], controller		Flight Data Processor ([ERAM, Host, Stars, or any version of ARTS])	
Contributors	Altering Events		
ANSP, pilot	Usually assigned to aircraft immediately prior to departure. ANSP may modify beacon code at any time (e.g., handoff, change of flight status, emergencies or special events). Pilot may change the transponder to special use codes (e.g., 7500, 7600, 7700, 1200).		
Audience	Data Usage		
ANSP, DoD, DHS	Used by ANSP, DoD, DHS to track aircraft, and to display specific information about that aircraft.		
Data Type	Format	Units	Range
String of numeric characters	4 numeric (octal) characters — dddd	N/A	[0,7] (each character)
Example			
1234, 1200			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated	Frequently, determined by the tracking equipment used (every 1-12 seconds)
Disposition			Mandatory
[TBD]			Yes

Beacon Code			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Aircraft Situation Display To Industry: Functional Description and ICD			
<u>Data Transactions or Interfaces</u>			
US government agencies only, no private industry. Message Sets: CMS, ASDI			
<u>Notes</u>			
The beacon code and altitude were historically displayed verbatim on the radar scope next to the target, however modernization has extended the radar data processor with a flight data processor , or FDP. The FDP automatically assigns beacon codes to flight plans, and when that beacon code is received from an aircraft, the computer can associate it with flight plan information to display immediately useful data, such as aircraft callsign, the aircraft's next navigational fix, assigned and current altitude, etc. near the target in a <i>data block</i> .			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.69 Boundary Crossing Point Inbound

Boundary Crossing Point Inbound				
Name		Taxonomy		
Boundary Crossing Point Inbound		[TBD]		
Synonyms		Keywords		
Inbound Boundary Crossing Point		Crossing, point, inbound, boundary		
Description				
A point on the shared boundary between ATC facilities over which a flight will exit the current facility and enter the next. Identifies the point on the boundary of an ATC facility, equivalent to a fix, over which a flight will enter.				
Has Parts		Is Part Of		
None		None		
Creator		Source		
Automation (Host/ERAM)		Host/ERAM		
Contributors	Altering Events			
Host/ERAM, Controller	This point is calculated by Automation. It is modified whenever the route of the aircraft changes, possibly FPL route amendment			
Audience	Data Usage			
TFM, ATC, Automation	Coordination inter-facility, metering, any fix manipulation available to controller (e.g, hold, delay)			
Data Type	Format	Units	Range	
String of alphanumeric characters	9–12 characters, latitude/longitude of boundary crossing point — dddd(L)/(d)dddd(L), ddddd/ddddd	Lat/long-Degrees and minutes	n/a	
Example				
4216/7615, 712345/454533				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
[TBD]		Current	Automated	Once at filing, and with low to medium frequency when a flight plan’s route of flight is changed
Disposition				Mandatory
[TBD]				No
Requires		Is Required By		
None		None		

Boundary Crossing Point Inbound			
References			
ETMS-to-HID NAS LAN ICD NAS-IC-24032410-14, NAS MD-311, NAS MD 315			
Data Transactions or Interfaces			
HADDs HU Message, Flow Control Update Information (UZ) Message			
Notes			
Associated with Proposed Boundary Crossing Time (PBCT) and Actual Boundary Crossing Time (ABCT)			
Version	Date	Author	Description of Changes
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.70 Calculated Inbound Boundary Crossing Time

Calculated Inbound Boundary Crossing Time			
Name		Taxonomy	
Calculated Inbound Boundary Crossing Time		[TBD]	
Synonyms		Keywords	
None		Boundary, crossing, time, inbound, calculated	
Description			
The time at which a flight is estimated to traverse an Inbound Boundary Crossing Point via exiting one ATC facility and entering the adjacent facility.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation (Host/ERAM)		ERAM	
Contributors	Altering Events		
Host/ERAM	Initially calculated by Automation, updated whenever a flight plan’s route is amended.		
Audience	Data Usage		
TFM, ATC, Automation	Traffic counts, transfer control		
Data Type	Format	Units	Range
String of alphanumeric characters	5 characters — Edddd	n/a	n/a
Example			
E1246			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated	Once when FPL is filed, updated with low-medium frequency when a flight plan amendment results in a re-computation of the trajectory, or by Automation [frequently?] based on surveillance data
Disposition			Mandatory
[TBD]			No

Calculated Inbound Boundary Crossing Time			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ETMS-to-HID NAS LAN ICD NAS-IC-24032410-14, NAS MD-311, NAS MD 315			
<u>Data Transactions or Interfaces</u>			
HADDs HU Message, Flow Control Update Information (UZ) Message Message Sets: ASDI			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.71 Calculated Speed

Calculated Speed			
Name		Taxonomy	
Calculated Speed		[TBD]	
Synonyms		Keywords	
		TO Message	
Description			
Speed computed from the two reported points and the specified times at those points, this is an inaccurate computation and should be used after applying a validity test. This is always a three digit number. The units are nautical miles per hour for this calculated ground speed			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation		TFMS	
Contributors	Altering Events		
Automation	New position reports received		
Audience	Data Usage		
TFMS, ERAM	Provide ETA estimates, maintain separation		
Data Type	Format	Units	Range
String of numerical characters	3 digits; ddd	Nautical miles/hour	000to 999
Example			
123			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automatic	Occasional
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
ASDI Functional Description and Interface Control Document Version 5.4, NAS MD 311			
Data Transactions or Interfaces			
ASDI message (TO)			
Notes			

Calculated Speed			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.72 Cancel Reason

Cancel Reason	
Name	Taxonomy
Cancel Reason	[TBD]
Synonyms	Keywords
	CDM, ADL, TFMS
Description	
<p>A code indicating the reason for cancellation of a flight. The possible values and their meanings are:</p> <ul style="list-style-type: none"> UX (Update Cancelled): Indicates that the flight is currently cancelled due to an EDCT UPDATE cancel. A Traffic Manager may utilize the EDCT UPDATE command to cancel a flight that is part of a TMI. FX (FX Cancelled): Indicates that the flight is currently cancelled and an FX message has been processed for this flight. An FX message is the CDM message used by a CDM Participant to indicate a flight is not operating. RZ (RZ or NAS Cancelled): Indicates that the flight is currently cancelled and an RZ message has been processed for this flight. An RZ message is a NAS flight plan cancel message. RS (RS Cancelled): Indicates that the flight is currently cancelled and an RS message has been processed for this flight. An RS message is an internal ETMS message generated when an Authorized FAA User takes an OAG flight out of the database. TO (Time-Out Cancelled): Indicates that the flight is currently cancelled due to having been timed out by ETMS. ETMS times out a flight when no activation message has been received within a certain time of the predicted departure time. The time out logic for flights departing the 20 Continental United States (CONUS), seven Canadian, Honolulu (ZHN/PHZH) and Anchorage (ZAN/PAZA) Centers is as follows: <ul style="list-style-type: none"> If NAS messages have been received for a flight, ETMS will time out the flight 90 minutes after its predicted departure time. If only OAG data or CDM messages have been received for a flight, ETMS will time out the flight five minutes after departure time. <p>ETMS does not time out flights departing from other regions of the world.</p> DV (Diversion Cancelled): Indicates that the flight is currently cancelled and was diverted to an alternate destination. The diversion may have come from either a NAS flight plan or a CDM modify (FM) message. RM (Remove Cancelled): Indicates a flight that has been manually removed by an Authorized FAA User. 	
Has Parts	Is Part Of
n/a	n/a

Cancel Reason				
Creator		Source		
TFMS		TFMS		
Contributor s	Altering Events			
airspace user, TFMS, FAA	Airspace users can send a CDM FX or FM message. TFMS can time-out a flight, process FX, RZ or RS messages. Authorized FAA user can issue an EDCT update or remove a flight.			
Audience	Data Usage			
TFMS	Used for matching a flight in an FC message in the case of a diversion recovery with ID change, where the cancel reason is “FX” or “DV”. Used to identify cancelled flights when allocating slots for a GDP or AFP. Used by Adaptive Compression to identify unused slots. Used to identify slots available for substitution.			
Data Type	Format	Units	Range	
Alpha	2 characters	n/a	n/a	
Example				
UX, RS, TO				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
		current	Automated	occasional
Disposition				Mandatory
Exists until flight is disposed of or flight is re-instated.				no
Requires		Is Required By		
n/a		n/a		
References				
ADL Description				
Data Transactions or Interfaces				
CDM messages, ADL reports, Diversion Recovery with Flight ID Change (System Req. memo)				
Notes				
A flight can have more than one cancel reason. If a flight is cancelled through more than one mechanism, TFMS accumulates the cancel reasons.				
Version	Date	Author	Description of Changes	
1.0	Aug 19, 2010	Claire Morton (Volpe)	Creation.	

1.73 CDM Member

CDM Member				
<u>Name</u>		<u>Taxonomy</u>		
CDM Member		[TBD]		
<u>Synonyms</u>		<u>Keywords</u>		
CDM_MBR		CDM, TFMS		
<u>Description</u>				
Flag indicating whether this flight belongs to a CDM Participant and is thus eligible for the full benefits of compression.				
<u>Has Parts</u>			<u>Is Part Of</u>	
n/a			n/a	
<u>Creator</u>			<u>Source</u>	
TFMS			TFMS	
<u>Contributor s</u>	<u>Altering Events</u>			
TFMS	Is set when flight created based on flight ID and adaptation data.			
<u>Audience</u>	<u>Data Usage</u>			
TFMS	TFMS allows full benefits of adaptive compression if this field is set to “Y”.			
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>	
alpha	L (one letter)	n/a	N or Y	
<u>Example</u>				
Y				
<u>Access Restriction</u>		<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]		current	automated	Once
<u>Disposition</u>				<u>Mandat ory</u>
				no
<u>Requires</u>			<u>Is Required By</u>	
n/a			n/a	
<u>References</u>				
ADL Description				
<u>Data Transactions or Interfaces</u>				
ADL reports				
<u>Notes</u>				
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>	
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.	

1.74 Centers

Centers			
Name		Taxonomy	
Centers		[TBD]	
Synonyms		Keywords	
		Centers, predicted, trajectory	
Description			
Current prediction of the centers along the trajectory of a flight, where these predictions are based on all the information available to TFMS.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS generates an RT message for a flight under a variety of circumstances, with the most common being the receipt of an FS, FZ, or UZ message on that flight. (An FS message is an internal message that TFMS generates when a flight in the Official Airline Guide is loaded into the active TFMS databases; this typically happens twenty-four hours before the flight is scheduled to depart.)		
Audience	Data Usage		
TFMS, airspace user, ERAM	Metering, flow control, capacity management.		
Data Type	Format	Units	Range
Array of bytes (binary data)	1 byte per array entry	n/a	n/a
Example			
[TBD]			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	automated	Occasional (see “Altering Events”)
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
None		None	
References			
Aircraft Situation Display To Industry: Functional Description and Interface Control Document (ver. 5.4)			

Centers			
<u>Data Transactions or Interfaces</u>			
ASDI message (RT)			
<u>Notes</u>			
This data element should be renamed "Predicted centers"			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.75 Coast Indicator

Coast Indicator			
Name		Taxonomy	
Coast Indicator		[TBD]	
Synonyms		Keywords	
		Aircraft, tracking, track, detection, surveillance, radar, position	
Description			
An indicator that the aircraft was unexpectedly not detected by radar (after a period of tracking)			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Host/ERAM		Host/ERAM	
Contributors	Altering Events		
Host/ERAM	Provided as part of the CMS TH message whenever the radar has lost track of the aircraft		
Audience	Data Usage		
TFMS, controllers, airspace users	Used to gain situational awareness		
Data Type	Format	Units	Range
Alphanumeric character	L = C (Coast) if the aircraft is coasting, null otherwise.	n/a	n/a
Example			
C			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Frequent, every 12 seconds as part of the CMS Track Information Message (TH)
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
ICD NAS-IC-24032410-14			

Coast Indicator			
Data Transactions or Interfaces			
CDM messages (TH)			
Notes			
In the final version of the Flight Object, this data element will have unambiguous values for both the coasting and non-coasting situation (e.g., YES/NO, TRUE/FALSE).			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Added format clarification regarding the null value in case the aircraft is not coasting

1.76 Control Element

Control Element			
Name		Taxonomy	
Control Element		[TBD]	
Synonyms		Keywords	
CTL_ELEM		Control, element, CTL_ELEM	
Description			
If a flight is controlled (i.e., is in a GDP, GS, or AFP), the CTL_ELEM indicates the constrained NAS element for which the controlling TMI was issued. Currently, the CTL_ELEM can be an arrival airport, if the flight is in a GDP or GS, or an FCA, if the flight is in an AFP.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
ATCSCC, TFMS		TFMS	
Contributors	Altering Events		
TFMS	<p>When TFMS first applies control times to a flight, it sets the Control Element to the name of the airport or FCA for which the TMI was issued.</p> <p>If a flight is in a GDP, the GDP is purged, and the flight then becomes controlled by an AFP, TFMS sets the Control Element to the FCA for that AFP.</p> <p>If a flight is in an AFP, that AFP is purged, and the flight then becomes controlled by a different AFP, TFMS sets the Control Element to the FCA for the new AFP.</p> <p>If a flight routes out of an AFP into a different AFP, TFMS sets the Control Element to the FCA for the new AFP.</p>		
Audience	Data Usage		
TFMS	TFMS uses the Control Element in substitution processing to determine that flights are being swapped with other flights in the same program. TFMS uses the control element to perform Adaptive Compression and other maintenance of the programs.		
Data Type	Format	Units	Range
String of alphanumeric characters	ccc[c] for GDPs / FCAddd for AFPs	n/a	n/a
Example			
BOS, FCA012			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Occasionally

Control Element			
<u>Disposition</u>			<u>Mandatory</u>
Exists until the flight is no longer affected by the TMI, or the TMI is purged, or the flight is disposed of.			No
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
A TMI must be in effect.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.77 Control Exempt

Control Exempt			
Name		Taxonomy	
Control Exempt		[TBD]	
Synonyms		Keywords	
CTL_EXMPT, Exempt Flag		Control, exempt, delay, CTL_EXMPT, flag	
Description			
If a flight is controlled (i.e., has a CTD and CTA), the Control Exempt flag indicates whether the flight was categorized as “exempt from delay” when the AFP/GDP-Initial or AFP/GDP-Revision was computed. A flight can be exempt from delay due to its departure time status or departure location. For example, an international departure to a U.S. airport is exempt in a GDP.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS (FSM) sets Control Exempt TRUE when it determines that a flight in a GDP or AFP is exempt from delays. If an airspace user performs a substitution on an exempt flight, TFMS clears the exempt flag.		
Audience	Data Usage		
Airspace users Traffic managers	The exempt flag is used to help understand why particular flights are delayed or not delayed.		
Data Type	Format	Units	Range
Boolean	One of {TRUE, FALSE, null}	n/a	n/a
Example			
TRUE, FALSE			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automatic	Occasional
Disposition			Mandatory
Exists until the TMI is rescinded or the flight is disposed of.			No
Requires		Is Required By	
None		None	
References			
ADL Description, ICD for GDPs and AFPs			
Data Transactions or Interfaces			
ADL files, GDP/AFP messages			

Control Exempt			
Notes			
Flight must be in a GDP or AFP.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.78 Control Type

Control Type			
Name		Taxonomy	
Control Type		[TBD]	
Synonyms		Keywords	
Type, CTL_TYPE		Control, type, CTL_TYPE	
Description			
Indicates, to at least some degree, the source of the current control times for a flight that is in a GDP, GS, or AFP.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS.		TFMS	
Contributors	Altering Events		
TFMS	TFMS sets the Control Type whenever it updates the control times (EDCT and CTA) for a flight based on the source of the updated values.		
Audience	Data Usage		
Traffic managers Airspace users	Traffic managers use the Control Type to help understand where a flight's control times came from; primarily, who took the action to set those control times. NAS users use the Control Type to help understand where a flight's control times came from; primarily, who took the action to set those control times.		
Data Type	Format	Units	Range
String of alphanumeric characters	2 to 4 characters - one string from the following controlled vocabulary: {ABRG, AFP, COMP, DAS, ECR, GAAP, GDP, GS, RCTL, SBRG, SCS, SUB, UPD}.	n/a	n/a
Example			
GDP, ABRG, AFP			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Set once and changed occasionally for flights in a GDP or AFP.

Control Type			
<u>Disposition</u>			<u>Mandatory</u>
If a GDP or AFP is purged before a flight departs, the Control Type is deleted at that time. Otherwise it remains as long as the flight does.			No
<u>Requires</u>		<u>Is Required By</u>	
None.		None	
<u>References</u>			
ICD for GDPs and AFPs, CDM Message Formats, ADL Description			
<u>Data Transactions or Interfaces</u>			
GDP/AFP Messages, ADL Files			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.

1.79 Controlled Time of Arrival (CTA)

Controlled Time of Arrival (CTA)	
<u>Name</u>	<u>Taxonomy</u>
Controlled Time of Arrival (CTA)	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
None.	Controlled, time, arrival, assigned
<u>Description</u>	
The time of arrival assigned to a flight as part of a GDP or AFP. For a GDP, the CTA represents the time the flight should arrive at the controlled airport. For an AFP, the CTA represents the time the flight should arrive at the controlled FCA boundary.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
TFMS, in almost all cases. Airspace user, very rarely.	TFMS
<u>Contributors</u>	<u>Altering Events</u>
TFMS Airspace user Traffic manager	<p>Usually created when TFMS computes a GDP or AFP (includes new and revised programs).</p> <p>Can be created when TFMS processes a pop-up flight in a GDP or AFP.</p> <p>Modified when TFMS (Adaptive Compression) moves flights to prevent an arrival slot from going unused.</p> <p>Modified when TFMS responds to a Slot Credit Substitution request from an airspace user.</p> <p>Modified when airspace user substitutes flights into new slots.</p> <p>Modified by traffic manager in response to a request (white hat) from an airspace user.</p> <p>Very rarely created by airspace user using the Slot Create message.</p>
<u>Audience</u>	<u>Data Usage</u>
Airspace users, FSA	<p>Airspace user uses CTA to determine flight plan and departure time needed to arrival at expected time.</p> <p>Airspace users use EDCTs and CTAs to determine the impact of a TMI on their operations and to decide how to respond to the TMI. For example, an airspace user might cancel flights, generate substitutions, or change destinations as a result of receiving control times.</p> <p>FSA uses CTA to compute arrival compliance.</p>

Controlled Time of Arrival (CTA)			
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	Valid date and time
<u>Example</u>			
261834			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
Airspace users do not want control times going to general public.	Current	Automated and manual.	Created once and changed occasionally for flights in GDP or AFP.
<u>Disposition</u>			<u>Mandatory</u>
If a GDP or AFP is purged before a flight departs, the CTA is deleted at that time. Otherwise it remains as long as the flight.			No
<u>Requires</u>		<u>Is Required By</u>	
A flight with a CTA must also have a CTD, Control Element, Control Exempt, and Hold Flag. If the CTA if for an AFP, it must be associated with an FEA or FCA.		None	
<u>References</u>			
ICD for GDPs and AFPs, CDM Message Formats			
<u>Data Transactions or Interfaces</u>			
GDP/AFP messages, ADL files			
<u>Notes</u>			
A CTA is often accompanied by an ASLOT. The time in the ASLOT is often, but not always, the same as the CTA.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.

1.80 Controlled Time of Departure (CTD)

Controlled Time of Departure (CTD)	
<u>Name</u>	<u>Taxonomy</u>
Controlled Time of Departure (CTD)	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
Estimated Departure Clearance Time, EDCT	Controlled, time, departure, takeoff, EDCT, wheels up
<u>Description</u>	
The time at which a flight is required to take off by a TMI such as a GDP or AFP. The EDCT is a wheels-up time. A flight is generally considered to be compliant with its EDCT if it takes off within plus or minus 5 minutes of the EDCT.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
TFMS in almost all cases. Airspace user, very rarely.	TFMS.
<u>Contributors</u>	<u>Altering Events</u>
TFMS Airspace user Traffic manager	<ul style="list-style-type: none"> Usually created when TFMS computes a GDP or AFP (includes new and revised programs). Can be created when TFMS processes a pop-up flight in a GDP or AFP. Modified when TFMS (Adaptive Compression) moves flights to prevent an arrival slot from going unused. Modified when TFMS responds to a Slot Credit Substitution request from an airspace user. Modified when airspace user substitutes flights into new slots. Modified when airspace user re-plans a flight; given a new ETE, they must adjust the CTD to hit their CTA. Modified by traffic manager in response to a request (white hat) from an airspace user. Very rarely created by airspace user using the Slot Create message.
<u>Audience</u>	<u>Data Usage</u>
Tower ERAM Airspace users TFMS TMA Traffic managers FSA	<ul style="list-style-type: none"> Tower uses CTD to know when to let a flight take off. ERAM/host uses CTDs to print flight strips. Airspace users use CTDs to plan for a flight's departure. For example, an airline will want to have the crew, airframe, and passengers ready to meet the CTD, and will want to push back in time to hit the EDCT. Airspace users use CTDs and CTAs to determine the impact of a TMI on their operations and to decide how to respond to the TMI. For example, an airspace user might cancel flights,

Controlled Time of Departure (CTD)			
	generate substitutions, or change destinations as a result of receiving control times. <ul style="list-style-type: none">• TFMS uses CTDs to model flight departure times.• TMA uses CTDs for display on the departure timeline.• Traffic managers in the TMU use CTDs to schedule departures when TMA or some other metering program is in effect.• FSA uses CTDs to compute departure compliance.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	Valid date and time
Example			
271745			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
Airspace users do not want control times going to general public.	Current	Automated or manual	Created once and changed occasionally for flights in GDP or AFP.
Disposition			Mandatory
If a GDP or AFP is purged before a flight departs, the EDCT is deleted at that time. Otherwise it remains as long as the flight does.			No
Requires	Is Required By		
A flight with a CTD must also have a CTA, Control Element, Control Exempt, and Hold Flag.	None		
References			
ICD for GDPs and AFPs; CDM Message Formats			
Data Transactions or Interfaces			
GDP/AFP messages, ADL files			
Notes			
CTDs are commonly referred to as EDCTs. The name CTD is used here to maintain parallelism with CTA.			
Version	Date	Author	Description of Changes
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.

1.81 Controlling Facility

Controlling Facility			
Name		Taxonomy	
Controlling Facility		[TBD]	
Synonyms		Keywords	
Facility Identifier		Facility, controlling	
Description			
Designates the ATC facility in control of the aircraft in question.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation (Host/ERAM)		ERAM	
Contributors	Altering Events		
Host/ERAM, Controller	Change in inter-facility track control, either by automation or manual handoff		
Audience	Data Usage		
TFM, ATC, and Automation	Identifies the ATC facility with track control of a flight, traffic counting		
Data Type	Format	Units	Range
String of alphanumeric characters	3 characters - LLL representing the air traffic facility identifier	n/a	n/a
Example			
ZDC, ZOB, ZSE, IAD, D10			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or occasionally manual	Once when the FPL is filed, updated when track control transfers inter-facility
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Numerous, such as NAS-MD-311, NAS-IC-24032410-14			

Controlling Facility			
Data Transactions or Interfaces			
Track Information Messages, (field 138a), Inter-facility and inter-sector track related messages, PO, TI, TU, TA Message Sets: CMS (TH)			
Notes			
Often used in conjunction with sector identifier, e.g., Controlling Facility/Sector - LLL/da			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.82 Controlling Sector

Controlling Sector				
Name		Taxonomy		
Controlling Sector		[TBD]		
Synonyms		Keywords		
Sector Identifier		Flight plan, sector, controlling, control		
Description				
Designates the ATC sector position in control of the aircraft				
Has Parts		Is Part Of		
None		None		
Creator		Source		
Automation (Host/ERAM)		Host/ERAM		
Contributors	Altering Events			
Host/ERAM	Change in track control, either by automation or manual handoff			
Audience	Data Usage			
TFM, ATC, Automation	Used to identify sector positions in en route and terminal ATC facilities.			
Data Type	Format	Units	Range	
String of alphanumeric characters	3 characters representing facility followed by 2 characters identifying sector/position (dd or da)	n/a	n/a	
Example				
ZDC50				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
[TBD]		Current	Automated or manual	Defined when flight first created, updated when track control transfers via handoff.
Disposition				Mandatory
[TBD]				Yes
Requires		Is Required By		
None		None		
References				
NAS-MD-311, 315, NAS-IC-24032410-14				
Data Transactions or Interfaces				
Inter-sector track messages ; TI, TA, TU. Inter-sector track related messages, PO, TI, TU, TA Message Sets: CMS				

Controlling Sector			
Notes			
Often used in conjunction with facility identifier, e.g., Controlling Facility/Sector - LLL/da			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.83 Coordination Fix

Coordination Fix			
<u>Name</u>		<u>Taxonomy</u>	
Coordination Fix		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
None		ICAO Flight Plan, fix, coordination	
<u>Description</u>			
The fix at which one facility coordinates flight progress with the next facility			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Automation (Host/ERAM)		Automation (Host/ERAM)	
<u>Contributors</u>	<u>Altering Events</u>		
Host/ERAM	Only if the boundary is crossed in a different location will the coordination fix change.		
<u>Audience</u>	<u>Data Usage</u>		
TFM, ATC, Automation	The Coordination Fix is used by controllers to coordinate flight progress		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of alphanumeric characters	aa(a)(a)(a)(/)(a)(a)(a)(a)(a) for fix name or dddd(L)/(d)dddd(L) for Lat/Long or aa(a)(a)(a)dddddd for Fix Radial Distance	n/a	n/a
<u>Example</u>			
IRONS, 4315/11030			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automated	Once on filing and changed by Automation when the flight plan's inter-facility route of flight is amended
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	

Coordination Fix			
References			
Numerous; NAS MD 311, NAS-MD-315, ETMS-to-HID NAS LAN NAS-IC-24032410-14			
Data Transactions or Interfaces			
CMS: Flight Plan Information Message (FH) ASDI: Flight Plan Information Message (FZ)			
Notes			
Coordination Fix is associated with Calculated Time of Arrival (CTA) at the Coordination Fix.			
Version	Date	Author	Description of Changes
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Clarified the association with the flight plan messages associated with the CMS and ASDI interfaces, not the ICAO flight plan.

1.84 Coordination Time

Coordination Time			
Name		Taxonomy	
Coordination Time		[TBD]	
Synonyms		Keywords	
Filed Coordination Time		ICAO Flight Plan, FPL, coordination, time	
Description			
Proposed flight plans to adjacent NAS centers are transmitted as type F (Flush) flight plans by setting the type of time (Field 07) to F. When entered as a result of a Flight Plan message, the activity status is determined by the type-of-time element entered in Field 07 (Coordination Time) of the FP message as follows: a. Active — when the coordination time is an actual time (D-time) or an estimated time (E-time). b. Proposed — when the coordination time is a proposed time (P-time) or a flush time (F-time).			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation (Host/ERAM)		Automation (Host/ERAM)	
Contributors	Altering Events		
Host/ERAM	Whenever the flight plan’s route of flight is amended, the Coordination Time may change.		
Audience	Data Usage		
TFM, ATC, Automation	The Coordination Time is used to schedule the transfer of control between controllers in adjacent ATC facilities.		
Data Type	Format	Units	Range
String of alphanumeric characters	Ldddd, where L = D,E,P, or F; or dddd for coordinated universal time; or XXdd for time relative to current time; or +/-Tddd for FAD Flow Delay	Time - Hours and minutes	n/a
Example			
D1350, EXX04			

Coordination Time			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automated	Once with the FPL filing and subsequently changed when the flight plan's inter-facility route of flight is amended
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Numerous; NAS MD 311, NAS-MD-315, ETMS-to-HID NAS LAN NAS-IC-24032410-14			
<u>Data Transactions or Interfaces</u>			
Flight Plan related messages - both intra and inter-facility Message Sets: ASDI, CMS			
<u>Notes</u>			
Coordination Time is associated with the Coordination Fix which are both filed in the IFR flight plan.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Enhanced description.

1.85 Delay

Delay			
Name		Taxonomy	
Delay		[TBD]	
Synonyms		Keywords	
Arrival Delay, Delay Time, Delay Interval, Departure Delay		Delay, time	
Description			
Time, in minutes, for which a flight is to be delayed. Typically, referenced to a metering fix or vertex. This is the controller-entered version of “Delay”.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Controller		Host / ERAM	
Contributors	Altering Events		
Controller	Modified whenever a revision to metering is initiated.		
Audience	Data Usage		
Airspace users, TFMS, Controller	Used to extend departure, ETE, and ETA for flights subjected to metering restrictions, or other flight delaying activities (e.g., practicing approaches, training activities in SUAs)		
Data Type	Format	Units	Range
String of alphanumeric characters	(d)dd, or “XX” if > 99	Minutes	0 - 99
Example			
45, 120, XX			
Access Restriction		Maturity	Accrual Method
[TBD]		Current	Automated or manual
			Accrual Periodicity
			Defined when flight first created and changed periodically with flight plan and metering revisions.
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Delay			
References			
Numerous, such as; NAS-MD-311, NAS-MD-315, NAS IC-24032410-14			
Data Transactions or Interfaces			
Flow Control Advisory Information, ICAO Delay Message DLA, En Route Spacing and Arrival Sequencing (ESP/ASP) Messages, FAD Flow Delay Value, Amendment Message, Departure Delay Message (DD), Arrival Delay (NF) Message Sets: CMS			
Notes			
Version	Date	Author	Description of Changes
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.86 Delay Reason

Delay Reason	
Name	Taxonomy
Delay Reason	[TBD]
Synonyms	Keywords
None	CDM, ADL, TFMS
Description	
<p>A code indicating the reason for the delay of a flight. The possible values and their meanings are:</p> <ul style="list-style-type: none"> • ALD (Airline Delayed): Indicates that the CDM Participant has at some point sent in a departure time estimate (via an FC or FM) for a flight that was later than the estimate previously in the database. • GDP (GDP Delayed): Indicates that the flight has at some point been controlled by a GDP-Initial or GDP-Revision. • AFP (AFP Delayed): Indicates that the flight has at some point been controlled by an AFP-Initial or AFP-Revision. • DAS (DAS Delayed): Indicates that a DAS (formerly FA) delay has been applied to this flight. • GSD (Ground Stop Delayed): Indicates the flight has at some point been part of a GDP-Ground Stop program. • TOD (Time Out Delayed): Indicates that ETMS is delaying this flight due to the fact that it has not departed as projected. The TOD status precedes a time out cancel (TO). A time out delay occurs when a flight has a flight plan message, its departure time is in the past, and it has not been activated yet. In this case, ETMS moves the flight back in time in 5-minute increments until cancelled by time out logic (see Cancel Reason field TO description). If ETMS receives a new message for this flight moving its departure time into the future, the TOD flag will be cleared indicating that the flight is not longer in time out delay. Time out delay logic is applied only to the same flight as time out cancel logic. 	
Has Parts	Is Part Of
n/a	n/a
Creator	Source
TFMS	TFMS
Contributors	Altering Events
TFMS, airspace user, Traffic Manager	<p>The airspace user issues a CDM command (FC, FM) that alters departure time from that originally associated with the flight (ALD). Traffic Manager issues a TMI that creates delays in departure time (GDP, AFP, DAS, GSD).</p> <p>TFMS determines that the flight has timed out (TOD).</p>

Delay Reason			
Audience	Data Usage		
TFMS, airspace users	Used to identify cancelled flights when allocating slots for a GDP or AFP.		
	Used by Adaptive Compression to identify unused slots.		
	Used to identify slots available for substitution.		
Data Type	Format	Units	Range
alpha	3 characters	n/a	n/a
Example			
ALD, GDP, AFP, DAS, GSD, TOD			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	current	automated	occasional
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		n/a	
References			
ADL Description			
Data Transactions or Interfaces			
CDM messages, ADL reports			
Notes			
A flight can have more than one delay reason.			
Version	Date	Author	Description of Changes
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.87 Departure Airport

Departure Airport			
Name		Taxonomy	
Departure Airport		[TBD]	
Synonyms		Keywords	
Departure point, origin, ORIG, departure aerodrome.		ICAO Flight Plan, FPL, departure, airport, origin, ORIG, aerodrome, point	
Description			
ICAO identifier for the airport of origin for this flight.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Prior to the flight plan being filed, TFMS is the source of the current Departure Airport. After a flight plan is filed, ERAM is the source.	
Contributors	Altering Events		
Airspace user	Defined when flight first created. Departure Airport can be changed time through a Flight Plan amendment.		
Audience	Data Usage		
Many CDM and Airspace users and systems.	Used to identify flights, print departure strips, model trajectories, model airport demands, compute EDCTs, etc.		
Data Type	Format	Units	Range
String of alphanumeric characters	3 or 4 characters representing the airport code	n/a	n/a
Example			
JFK, KJFK, 3AK5			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated	Defined once when flight created.
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Departure Airport			
References			
NAS-MD-311; ICAO 4444; CDM Message Formats			
Data Transactions or Interfaces			
CDM messages (FC, FM, FX), ADL files, GDP/AFP messages, TFMDI messages, XFS messages, SEVEN messages.			
Notes			
Some systems (e.g., TFMS) also accept published FAA three-letter designators for US airports.			
Version	Date	Author	Description of Changes
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen)	Added flight plan amendment as an altering event.

1.88 Departure Fix

Departure Fix				
Name		Taxonomy		
Departure Fix		[TBD]		
Synonyms		Keywords		
DFIX		TFMS, ADL		
Description				
The name of the departure fix, at the origin airport, as determined by TFMS modeling.				
Has Parts		Is Part Of		
n/a		n/a		
Creator		Source		
TFMS		TFMS		
Contributor s	Altering Events			
TFMS Airspace user	TFMS sets the departure fix based on the modeled route of flight. Airspace users can cause the DFIX to change by filing a modified flight plan. A reroute issued by a traffic manager could also change the DFIX.			
Audience	Data Usage			
TFMS airspace user	Used to display to Traffic managers and airspace users. Used to compute departure fix loads.			
Data Type	Format	Units	Range	
alpha	LLL[LL] (3 - 5 letters)	n/a	valid departure fix name	
Example				
TRIXY, MUMSY				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
		current	automated	once
Disposition				Mandat ory
				no
Requires		Is Required By		
n/a		EADT		
References				
ADL Description				
Data Transactions or Interfaces				
ADL lists				

Departure Fix			
<u>Notes</u>			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.89 Destination Airport

Destination Airport			
Name		Taxonomy	
Destination Airport		[TBD]	
Synonyms		Keywords	
Destination Aerodrome, arrival airport		ICAO Flight Plan, Flight Plan, FPL, Flight Plan Message, FPH	
Description			
The ICAO four-letter location indicator of the destination aerodrome or location identified either as a named fix, or a pair of latitude/longitude coordinates.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		HOST/ERAM	
Contributors	Altering Events		
Airspace user	Amendment to flight plan		
Audience	Data Usage		
TFMS	Used to develop automated trajectories that assist TFM		
Data Type	Format	Units	Range
String of characters	ICAO 4444: Four letters CMS: aa(a)(a)(a)(a)(a)(a)(a)(a) dddd(L)/(d)dddd(L) for Lat/long aa(a)(a)(a) for fix name	N/A	N/a
Example			
EGBJ			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or automated	Once through flight plan, subsequent updates via FPL amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
ICAO 4444			

Destination Airport			
Data Transactions or Interfaces			
ICAO FPL item #16 CMS: Part of the Flight Plan Information Message, Flight Amendment Information Message (AH), Flight Plan Update Information Message (HU), ICAO Associated Data Information Message (HI), ICAO Amended Associated Data Information Message (HJ), RDB Flight Plan Information Message (FHI),			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.6	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.90 Dinghies

Dinghies			
Name		Taxonomy	
Dinghies		[TBD]	
Synonyms		Keywords	
n/a		ICAO Flight Plan, FPL, aircraft, life raft, equipage, over water, oceanic flight, SPL, supplementary	
Description			
Number of dinghies carriedThis information is used for emergency and survival preparedness.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Aircraft operator		flight planning service	
Contributors	Altering Events		
n/a	Amendments due to changes in the associated flight plan.		
Audience	Data Usage		
Search and rescue, [TFMS?]	Used to inform search and rescue of survival capabilities during an emergency		
Data Type	Format	Units	Range
String of numeric characters	2 numerics	N/A	N/A
Example			
01			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.			

Dinghies			
<u>Data Transactions or Interfaces</u>			
Information captured when flight plan filed, or amended. Information is read when transferred to search and rescue			
<u>Notes</u>			
This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Changed "Source" from "None" to "flight planning service". Added notes.

1.91 Diversion Recovery

Diversion Recovery			
Name		Taxonomy	
Diversion Recovery		[TBD]	
Synonyms		Keywords	
DVREC		Diversion, recovery	
Description			
The Diversion Recovery flag indicates that a flight is the recovery for a flight that changed its original destination. A Diversion Recovery flight inherits data from the original flight to ensure that it is given the same degree of priority that the original flight would have received in any GDP or AFP that has been or may be in effect. The Diversion Recovery field simply indicates the flight is a result of a change of destination; it is not an indicator that the flight has requested priority handling by submitting DVRSN in the flight plan remarks.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS Airspace user	When TFMS creates a new flight entry from an FC, FM, or FZ message, it checks whether the new flight is a diversion recovery for an existing flight. If so, TFMS sets the Diversion Recovery flag as follows: G – This is the diversion recovery segment of a flight where the destination of the original flight was changed while that flight was still proposed. A – This is the diversion recovery segment of a flight where the destination of the original flight was changed after the original flight was active.		
Audience	Data Usage		
TFMS Traffic managers Airspace users	TFMS applies special processing to Diversion Recovery flights to ensure that they are given proper priority in any GDP or AFP computations. Traffic managers and airspace users use the Diversion Recovery flag to help track why a flight received the delays that it did. TFMS has the option of using the Diversion Recovery flag to automatically display flights on the Diversion Recovery web page.		
Data Type	Format	Units	Range
character	One of {G, A, null}	n/a	n/a
Example			
G			

Diversion Recovery			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automatic	Set once when a Diversion Recovery flight is created in TFMS.
<u>Disposition</u>			<u>Mandator y</u>
[TBD]			No
<u>Requires</u>		<u>Is Required By</u>	
A matching diverted flight.		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
When a flight plan is filed, the airspace user can indicate that a flight is a diversion recovery flight by inserting DVRSN in the remarks field. This requests priority handling for the flight. This indicator is maintained separately from the Diversion Recovery flag.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.92 Drop Out

Drop Out			
<u>Name</u>		<u>Taxonomy</u>	
Drop Out		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
DO		CDM, ADL, TFMS	
<u>Description</u>			
Status marker indicating that a flight was in an FCA but either due to cancellation, rerouting, or change in entry time it will no longer traverse the FCA (i.e. it has Dropped Out of the FCA) during the controlled period. (NOTE: In the case of an FEA the traffic has no baseline, thus no flight will ever have a DO status for an FEA.)			
<u>Has Parts</u>		<u>Is Part Of</u>	
n/a		n/a	
<u>Creator</u>		<u>Source</u>	
TFMS		TFMS	
<u>Contributor s</u>	<u>Altering Events</u>		
TFMS	A flight that previously was in an FCA during the ADL time period has a time change, a route change, or is cancelled.		
<u>Audience</u>	<u>Data Usage</u>		
TFMS	Used by TFMS to determine which slots are available for adaptive compression or substitutions.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
alpha	L (one letter)	n/a	Y or N
<u>Example</u>			
Y			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
	current	automated	Occasional
<u>Disposition</u>			<u>Mandat ory</u>
Exists until flight is disposed of or becomes controlled by another TMI or the FCA is deleted.			no
<u>Requires</u>		<u>Is Required By</u>	
n/a		n/a	
<u>References</u>			
ADL Description, ICD for Substitutions During GDPs and AFPs.			
<u>Data Transactions or Interfaces</u>			
ADL reports.			

Drop Out			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.93 Earliest Entry (EENTRY)

Earliest Entry (EENTRY)			
Name		Taxonomy	
Earliest Entry (EENTRY)		[TBD]	
Synonyms		Keywords	
Earliest Element Entry Time		Earliest, entry, time, element, EENTRY	
Description			
The earliest entry time into an FCA that a flight can accept in the event that AFP delays are reduced. Plays a similar role to ERTA in a GDP. EENTRY is specific to a particular FCA, and is computed only for FCAs that are designated in TFMS as “FSM-eligible”. A flight can have multiple EENTRY times.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS Airspace users	If a new flight is created that intersects an FSM-eligible FCA, or if an FSM-eligible FCA is created that intersects a flight path for a planned flight, TFMS computes the initial EENTRY for that flight/FCA. If a new flight plan or other flight data is processed that change the predicted flying time to the FCA, TFMS updates the EENTRY for that flight/FCA. If TFMS detects that the value of any of (ERTD, LRTD, LGTD) is changed, EENTRY is re-evaluated and possibly recomputed.		
Audience	Data Usage		
TFMS Airspace users	Used by TFMS (including FSM) to ensure that a flight will not be assigned a slot for an FEA/FCA that it cannot use. Used by airspace users to determine which flights might be able to use a given slot in an AFP.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date & time
Example			
311256			

Earliest Entry (EENTRY)			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automated	Created when a flight first intersects an FSM-eligible FCA, then updated occasionally.
<u>Disposition</u>			<u>Mandatory</u>
Exists until the flight is no longer affected by the FEA/FCA, or the FEA/FCA is disposed of.			No
<u>Requires</u>		<u>Is Required By</u>	
Must be associated with an FEA or FCA. Requires ENTRY, ETD, ERTD, LRTD, LGTD.		None	
<u>References</u>			
ADL Description, ICD for GDPs and AFPs			
<u>Data Transactions or Interfaces</u>			
ADL files, GDP/AFP messages.			
<u>Notes</u>			
Since the CDM Participants cannot send earliest entry times for an FEA/FCA, TFMS computes this value by adding the expected flying time to the FCA (ENTRY - ETD) to the earliest departure time (e.g., ERTD).			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.94 Earliest Runway Time of Arrival (ERTA)

Earliest Runway Time of Arrival (ERTA)			
Name		Taxonomy	
Earliest Runway Time of Arrival (ERTA)		[TBD]	
Synonyms		Keywords	
T8		Earliest, runway, time, arrival, ERTA	
Description			
The earliest arrival time that the CDM Participant would like to have assigned to this flight in a TMI. If the CDM Participant has sent this field in a CDM FC or FM message, then the most recent such time is contained in this field. A user can limit how much earlier ETMS will move a flight by sending an Earliest Runway Time of Arrival (ERTA). This is especially helpful when a GDP is being revised. If a flight is assigned 60-minutes of delay in a GDP, and then the GDP is revised, the user may have planned on taking some of all of that delay (for example, may have switched crews) and may not want to see the flight go back to its original ETA. The user can send an ERTA specifying the earliest CTA that flight will accept.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Originally set in CDM message (FC). Can be updated by the airline in subsequent CDM messages (FM).		
Audience	Data Usage		
TFMS	Used by TFMS to determine the earliest CTA a flight can be assigned when calculating GDPs, AFPs, Slot Credit Substitutions, and Adaptive Compression.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
030517			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Occasional
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	

Earliest Runway Time of Arrival (ERTA)			
References			
CDM Message Formats, ADL Description, ICD for GDPs and AFPs			
Data Transactions or Interfaces			
CDM messages (FC, FM), ADL files, GDP/AFP messages			
Notes			
If ERTA is not sent by the airspace user, TFMS falls back to some other arrival time.			
Version	Date	Author	Description of Changes
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.

1.95 Earliest Runway Time of Departure (ERTD)

Earliest Runway Time of Departure (ERTD)			
Name		Taxonomy	
Earliest Runway Time of Departure (ERTD)		[TBD]	
Synonyms		Keywords	
ERTD, T7		Earliest, runway, time, departure, ERTD	
Description			
Earliest departure time airline would like to have assigned to this flight in a TMI. If airline has sent this field in a CDM FC or FM message, then the most recent such time is contained in this field. See ERTA for more discussion.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Can be originally set in CDM create message (FC). Can be set or updated by the airspace user in subsequent CDM messages (FMs) or SEVEN messages (TOS).		
Audience	Data Usage		
TFMS	Used by TFMS to determine the earliest CTD a flight can be assigned when calculating GDPs, AFPs, Slot Credit Substitutions, Adaptive Compression, and SEVEN TMIs. Used by FSM to determine how to model a flight after a GDP or AFP is purged. Used by TFMS to compute EENTRY (if ENTRY and ETD are available).		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
022359			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Occasional
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
None		None	

Earliest Runway Time of Departure (ERTD)			
References			
CDM Message Formats, ADL Description, ICD for GDPs and AFPs, SEVEN ICD			
Data Transactions or Interfaces			
CDM messages (FC, FM), ADL files, GDP/AFP messages, SEVEN TOS messages			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.

1.96 Emergency Radio Equipment

Emergency Radio Equipment				
Name		Taxonomy		
Emergency Radio Equipment		[TBD]		
Synonyms		Keywords		
Emergency		ICAO Flight Plan, FPL, radio, equipment, survival, SPL, supplementary		
Description				
Emergency radio equipment.				
Has Parts			Is Part Of	
None			None	
Creator			Source	
Airspace user			Flight Planning Service	
Contributors	Altering Events			
Airspace user	Amendments due to changes in the associated flight plan.			
Audience	Data Usage			
Search and rescue, [ATC?]	Used to [?]			
Data Type	Format	Units	Range	
String of characters	One of the following characters: U (for UHF), V (for VHF), E (for ELBA)	N/A	N/A	
Example				
U				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
[TBD]		Current	Automated or manual	Once, with possible amendments
Disposition				Mandatory
[TBD]				Yes
Requires			Is Required By	
None			None	
References				
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.				

Emergency Radio Equipment			
<u>Data Transactions or Interfaces</u>			
Information captured when flight plan filed, or amended. Information is read when transferred to search and rescue			
<u>Notes</u>			
<ol style="list-style-type: none"> 1. For radio communications, Indicates if UHF on frequency 243.0 MHZ is available, if VHF on frequency 121.5 MHZ is available, and if the local transmitter (ELT) is available. 2. This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs). 			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Changed source from Host/ERAM to flight planning service. Added "SPL", and "supplementary to keywords. Enhanced "Data Transactions or Interfaces" and "Notes"

1.97 Endurance

Endurance			
Name		Taxonomy	
Endurance		[TBD]	
Synonyms		Keywords	
None		ICAO Flight plan, fuel, gas, gasoline, SPL, supplementary	
Description			
Fuel endurance (hours and minutes of fuel onboard)			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		[None?]	
Contributors	Altering Events		
Airspace user	Amendments due to changes in the associated flight plan. If the amount of fuel on-board changes prior to departure (e.g. due to runway idling)		
Audience	Data Usage		
Search and rescue, ATC	Planning alternate routes, and TMIs		
Data Type	Format	Units	Range
String of numeric characters	4-figure group giving the fuel endurance (in HHMM)	Hours and minutes	N/A
Example			
0245			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.			

Endurance			
<u>Data Transactions or Interfaces</u>			
Information captured when flight plan filed, or amended. Information is read when transferred to search and rescue, ATC			
<u>Notes</u>			
This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Changed source from Host/ERAM to flight planning service. Added "SPL", and "supplementary to keywords. Enhanced "Data Transactions or Interfaces" and "Notes"

1.98 ENTRY

ENTRY	
<u>Name</u>	<u>Taxonomy</u>
ENTRY	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
Estimated Element Entry Time, FCA Entry Time, Entry Time	Entry, estimated, element, time
<u>Description</u>	
ENTRY is the current best estimated entry time for an FEA or FCA considering all data sources. ENTRY is defined as the time a flight first crosses an FEA/FCA boundary. For a line segment FEA/FCA, ENTRY and EXIT will be the same. ENTRY is computed only for FSM-eligible FCAs.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
TFMS	TFMS
<u>Contributors</u>	<u>Altering Events</u>
TFMS	<p>When a flight is first created and that flight intersects one or more FSM-eligible FCAs, TFMS computes ENTRY for each FCA.</p> <p>When an FSM-eligible FCA is created or modified, TFMS creates ENTRY for each existing flight that intersects the FCA boundary.</p> <p>TFMS updates ENTRY whenever it updates flight times; this includes getting a data update from an airspace user, getting a new flight plan from ERAM, applying a new delay program to a flight, getting a track update for a flight.</p> <p>ENTRY is never changed once the flight has passed the FCA boundary.</p>
<u>Audience</u>	<u>Data Usage</u>
TFMS Traffic managers Airspace user	<p>TFMS uses ENTRY to compute demand numbers for FEAs and FCAs.</p> <p>TFMS uses ENTRY to determine what flights to include in an FCA-based ADL arrival list: all flights are in the FCA or cross the FCA between the ADL_START_TIME and ADL_END_TIME are included.</p> <p>TFMS uses ENTRY to compute CTAs for flights in an AFP.</p> <p>Traffic managers use the ENTRY times to determine whether flights will hit their CTAs in an AFP.</p> <p>Airspace users use ENTRY to determine whether flights in an AFP are going to hit their CTAs, and to compute substitutions.</p> <p>TFMS uses ENTRY to determine other FEA/FCA entry/exit time elements (IENTRY, EENTRY, OENTRY, BENTRY).</p>

ENTRY			
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
<u>Example</u>			
280944			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automated	Infrequent
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			No
<u>Requires</u>		<u>Is Required By</u>	
Must be associated with an FEA or FCA.		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
ENTRY is required for computing IENTRY, EENTRY, OENTRY, and BENTRY.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.99 Estimated Arrival Fix Time

Estimated Arrival Fix Time				
Name		Taxonomy		
Estimated Arrival Fix Time		[TBD]		
Synonyms		Keywords		
EAFT		ADL, FSM		
Description				
Time over the arrival fix as estimated by TFMS.				
Has Parts		Is Part Of		
none		None		
Creator		Source		
TFMS		TFMS		
Contributors	Altering Events			
TFMS	Calculated as part of the flight trajectory modeling.			
Audience	Data Usage			
TFMS FSM ADL	Can be specified as a parameter in the TFMS airborne holding time computations. Can be used in FSM to define filters and organize count lists, displays, reports, etc. Required flight data element in ADL			
Data Type	Format	Units	Range	
timestamp	ddhhmm	date/time	valid date/time	
Example				
291234, 020622				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
[TBD]		current	Automated	Rarely
Disposition				Mandatory
Exists until the flight is disposed of.				No
Requires		Is Required By		
Arrival Fix		None		
References				
ADL doc, TFMS doc, FSM doc				
Data Transactions or Interfaces				
TFMS (ADL), FSM				

<u>Notes</u>			
Prior to the flight crossing the arrival fix, this is a predicted time. After the flight crosses the fix, this is an estimation of the actual fix crossing time.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jul 19, 2010	Michael Harris (Volpe)	Initial version for review.

1.100 Estimated Departure Fix Time

Estimated Departure Fix Time				
Name		Taxonomy		
Estimated Departure Fix Time		[TBD]		
Synonyms		Keywords		
EDFT		ADL, FSM		
Description				
Time over the departure fix as estimated by TFMS.				
Has Parts		Is Part Of		
None		none		
Creator		Source		
TFMS		TFMS		
Contributors	Altering Events			
TFMS	Calculated as part of the flight trajectory modeling.			
Audience	Data Usage			
TFMS FSM ADL	Can be specified as a parameter in the TFMS airborne holding time computations. Can be used in FSM to define filters and organize count lists, displays, reports, etc. Required flight data element in ADL			
Data Type	Format		Units	Range
timestamp	Ddhhmm		date/time	valid date/time
Example				
291234, 020622				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
[TBD]		current	automated	rarely
Disposition				Mandatory
Exists until the flight is disposed of.				No
Requires		Is Required By		
Departure fix		none		
References				
ADL doc, TFMS doc, FSM doc				
Data Transactions or Interfaces				
TFMS (ADL), FSM				

<u>Notes</u>			
Prior to the flight crossing the arrival fix, this is a predicted time. After the flight crosses the fix, this is an estimation of the actual fix crossing time.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jul 19, 2010	Michael Harris (Volpe)	Initial version for review.

1.101 Estimated Hold Departure Time

Estimated Hold Departure Time			
<u>Name</u>		<u>Taxonomy</u>	
Estimated Hold Departure Time		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
		Hold	
<u>Description</u>			
Estimated time of departing a hold.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Controller		[Host/ERAM]	
<u>Contributors</u>	<u>Altering Events</u>		
	Hold message amendments		
<u>Audience</u>	<u>Data Usage</u>		
ANSP, controller, airspace user	Used for capturing when a flight is expected to leave a hold pattern (situational awareness)		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of alphanumeric characters	dddd for (HHMM), or “C” for ‘cleared’	n/a	n/a
<u>Example</u>			
0522			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automatic or manual	Once, with possible amendments
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			No

Estimated Hold Departure Time			
<u>Requires</u>		<u>Is Required By</u>	
An associated hold fix		None	
<u>References</u>			
ICD NAS-IC-24032410-14			
<u>Data Transactions or Interfaces</u>			
CMS messages (HH, HO, FHI)			
<u>Notes</u>			
When the hold is cleared, the Estimated Hold Departure Time is replaced with the “C” character			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.102 Estimated Time Enroute (ETE)

Estimated Time Enroute (ETE)			
Name		Taxonomy	
Estimated Time Enroute (ETE)		[TBD]	
Synonyms		Keywords	
Total Estimated Elapsed Time		ICAO Flight Plan, FPL, time, enroute, flight time	
Description			
HADDs field reference 243.9.0 NAS field number: 07d2			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		[Host/ERAM?]	
Contributors	Altering Events		
Airspace user, ANSP software	<ul style="list-style-type: none">An aircraft operator sets the initial ETE when first creating a flight in TFMS or HostAn aircraft operator can modify the ETE in either TFMS or Host / ERAM after the flight is created. This may also be done by ANSP software, i.e. TFMS, TMA, FSM		
Audience	Data Usage		
Airspace users and ANSP systems	Used in flight management software (i.e., TMA, FSM, TFMS) to predict sector loads, sector entry and exit times, monitor alert parameters, aso.		
Data Type	Format	Units	Range
numeric	Four digits representing HHMM	n/a	n/a
Example			
0200			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Created through FPL when flight first filed or as amended
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Estimated Time Enroute (ETE)			
References			
ICAO 4444, ASDI - Report no. ASDI-FD-001			
Data Transactions or Interfaces			
Transactions for predicting ETAs, assigning departure and/or arrival times Message Sets: CMS, ASDI			
Notes			
Version	Date	Author	Description of Changes
1.0	May 17, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.103 Estimated Time of Arrival (ETA)

Estimated Time of Arrival (ETA)	
Name	Taxonomy
Estimated Time of Arrival (ETA)	[TBD]
Synonyms	Keywords
Arrival time, runway arrival time, wheels-down time.	Estimated, time, arrival, ETA, wheels down, runway
Description	
<p>The ETD is the best estimated runway arrival time (that is, wheels-down time) considering all data contributors.</p> <p>TFMS models the en route time of a flight based on current route, altitude, speed, aircraft type, and winds. In nearly all cases, the ETA is the ETD plus the TFMS-modeled en route time. The only exception is when an airline has provided runway departure and arrival times, and the airline-provided time is being used for the ETD; in that case, the airline-provided runway arrival time is used as the ETA. Once a flight lands, the ETA is the actual arrival time.</p>	
Has Parts	Is Part Of
None	None
Creator	Source
TFMS, airspace user	TFMS
Contributors	Altering Events
TFMS Airspace users	<p>TFMS first computes an ETA when creating a flight. If the flight is created from an FC or FM message and the airspace user provides a Predicted Runway Arrival Time, TFMS uses that as the ETA. Otherwise, TFMS computes an ETA based on best available data.</p> <p>If the airspace user sends in a new Predicted Runway Arrival Time and the flight is not active, TFMS sets the ETA to that value.</p> <p>Otherwise, TFMS updates the ETA when there is a change to any data that affects the ETA. These events include: applying a GDP or AFP, processing a flight plan, receiving new predicted gate departure times from the airspace user, processing a departure message, and processing track updates.</p> <p>Once a flight lands, the ETA is no longer updated.</p>

Estimated Time of Arrival (ETA)			
<u>Audience</u>	<u>Data Usage</u>		
TFMS Airspace users Traffic managers	TFMS uses ETAs to compute arrival demand, which is displayed to traffic managers and airspace users through monitor/alert and FSM. Traffic managers use ETAs to monitor whether a GDP is proceeding according to plan. Airspace users use ETAs to determine flights that might miss their CTA times in a GDP or AFP, and to compute substitutions for flights in GDPs and AFPs. TFMS uses ETA to determine what flights should be included in a GDP and for computing the slot assignments.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
<u>Example</u>			
131922, 121836			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
Airspace Users may not want TFMS ETAs available to the general public.	Current	automated	Set when flight created, updated occasionally.
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
The CDM message includes the airline predicted arrival time. At times this has the same value as the ETA, but the ETA has much broader meaning and usage. ETA currently has a prefix that shows whether the time is estimated or actual, or whether the flight is controlled. We are proposing to eliminate the prefix and replace it with Flight Status, In Reroute, and In Delay Program.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.104 Estimated Time of Departure (ETD)

Estimated Time of Departure (ETD)	
Name	Taxonomy
Estimated Time of Departure (ETD)	[TBD]
Synonyms	Keywords
Departure time, runway departure time, wheels-up time.	Estimated, time, departure, ETD, runway, wheels up
Description	
<p>The ETD is the best estimated runway departure time (that is, wheels-up time) considering all data contributors. It may be set directly by an airspace user using a CDM message. If not, it is calculated by TFMS, usually using a predicted gate push-back time plus an estimated ground time. Once a flight departs, the ETD is the actual departure time.</p>	
Has Parts	Is Part Of
None	None
Creator	Source
TFMS, Airspace user	TFMS
Contributors	Altering Events
TFMS Airspace users	<p>TFMS first computes an ETD when creating a flight. If the flight is created from an FC or FM message and the airspace user provides a Predicted Runway Departure Time, TFMS uses that as the ETD. Otherwise, TFMS computes an ETA based on best available data.</p> <p>If the airspace user sends in a new Predicted Runway Departure Time and the flight is not active, TFMS sets the ETD to that value.</p> <p>Otherwise, TFMS updates the ETD when there is a change to any data that affects the ETD. These events include: applying a GDP or AFP, processing a flight plan, receiving new predicted gate departure times from the airspace user, and processing a departure message.</p> <p>Once a flight departs, the ETD is no longer updated.</p>
Audience	Data Usage
TFMS Airspace users FADT	<p>TFMS uses ETD to compute departure demand, which is displayed to traffic managers and airspace users through monitor/alert and FSM.</p> <p>TFMS uses the ETD as the reference time for modeling all other estimated flight times; for example, a sector entry time is modeled as the ETD plus the estimate flying time to that sector.</p> <p>Airspace users use ETD to determine flights that might miss the CTD times in a GDP or AFP, and to compute substitutions for flights in GDPs and AFPs.</p>

Estimated Time of Departure (ETD)			
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
<u>Example</u>			
131922, 121836			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
Airspace users may not want TFMS ETDs available to the general public.	Current	Automated	Set when flight created, updated occasionally.
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files.			
<u>Notes</u>			
ETD currently has a prefix that gives clues as to the status of the flight. We are proposing to eliminate the prefix and replace it with Flight Status, In Reroute, and In Delay Program. Needed to compute ETA, IENTRY, EENTRY, OETD, OETA, BETA.			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.105 EXIT

EXIT			
Name		Taxonomy	
EXIT		[TBD]	
Synonyms		Keywords	
None		Exit, time, estimated	
Description			
EXIT is the current, best, estimated exit time for an FEA or FCA considering all data sources. EXIT is defined as the time a flight last crosses an FEA/FCA boundary. For a line segment FEA/FCA, ENTRY and EXIT will be the same. ENTRY is computed only for FSM-eligible FCAs.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	<p>When a flight is first created and that flight intersects one or more FSM-eligible FCAs, TFMS computes EXIT for each FCA.</p> <p>When an FSM-eligible FCA is created or modified, TFMS computes EXIT for each existing flight that intersects the FCA boundary.</p> <p>TFMS updates EXIT whenever it updates flight times; this includes getting a data update from an airspace user, getting a new flight plan from ERAM, applying a new delay program to a flight, getting a track update for a flight.</p> <p>EXIT is never changed once the flight has passed the FCA boundary.</p>		
Audience	Data Usage		
TFMS	TFMS uses EXIT to compute demand numbers for FEAs and FCAs. TFMS uses EXIT to determine what flights to include in an FCA-based ADL arrival list: all flights are in the FCA or cross the FCA between the ADL_START_TIME and ADL_END_TIME are included.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
291033, 030303			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	automated	Occasionally.

EXIT			
<u>Disposition</u>			<u>Mandatory</u>
Exists until the flight or the FEA/FCA is disposed of.			No
<u>Requires</u>		<u>Is Required By</u>	
Associated with a specific FEA or FCA.		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL Files			
<u>Notes</u>			
EXIT is the exit time from a specific FCA or FEA, therefore it is only applicable to FEA/FCA-based ADLs. If we capture this, we also need to capture the FCA name.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.106 FCA_ID

FCA_ID				
Name		Taxonomy		
FCA_ID		[TBD]		
Synonyms		Keywords		
none		SEVEN, TFMS		
Description				
The FCA_ID is a system-generated, encoded identifier suitable for use by the automation but not for display to the user (an FCA name will be provided for user display). It becomes part of flight data when a flight is included in a SEVEN TMI. The FCA_ID is used to identify what FCAs are intersected by a flights trajectory options.				
Has Parts		Is Part Of		
n/a		n/a		
Creator		Source		
TFMS		TFMS		
Contributor s	Altering Events			
TFMS	Assigned to a flight’s trajectory options when a SEVEN TMI is issued that includes that flight. Can be updated by TFMS is the airspace user updates the trajectory options for the flight.			
Audience	Data Usage			
TFMS Airspace users	Used to uniquely identify an FCA intersected by a trajectory option when a SEVEN TMI is issued.			
Data Type	Format	Units	Range	
alphanumeri c	Four sections separated by periods (.).	n/a	n/a	
Example				
fca.cdmb.lxpc103.20040713161706				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
		Planned	automated	once
Disposition				Mandat ory
Exists until a SEVEN TMI is cancelled or the flight is disposed of.				no
Requires		Is Required By		
None		None		
References				
Interface Control Document for SEVEN				
Data Transactions or Interfaces				
SEVEN messages				

FCA_ID			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.107 FDB Free Form Text

FDB Free Form Text			
Name		Taxonomy	
FDB Free Form Text		[TBD]	
Synonyms		Keywords	
Full Data Block Free Form Text, FDB FOURTH LINE HEADING, SPEED AND FREE FORM TEXT		Text, remarks, Full data block, fourth, line, QS message	
Description			
NAS-MD-311: Controller specified text that is displayable in the 4 th line (Field F) of the FDB. Used in the QS message to create, change or delete stored FDB fourth line data.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Controller		HOST/ERAM	
Contributors	Altering Events		
Controller	Change in status of a track in the NAS.		
Audience	Data Usage		
ERAM	Used to share track-specific information about the NAS that is not specific to a flight.		
Data Type	Format	Units	Range
Alphanumeric characters	<u>NAS-MD-311</u> : Clear Weather Symbol followed by 1-8 characters. Only characters A–Z, 0–9, –, +, =, *, /, underscore (_), semicolon (;), period (.), comma (,), up arrow, down arrow and overcast symbol are valid as input following the clear weather symbol. Leading or embedded spaces are not allowed <u>NAS-IC-24032410-14</u> : 1-8 characters User -Specified Free Form Text	N/A	N/A
Example			
NAS-MD-311: O EXPEDITE, O 500KNOTS			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual	Infrequent

FDB Free Form Text			
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			No
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
NAS-MD-311, NAS-IC-24032410-14			
<u>Data Transactions or Interfaces</u>			
NAS-IC-24032410-14: RDB Flight Plan Information Message (FHI)			
NAS-MD-311: QS message			
<u>Notes</u>			
This data element might not be useful for the Flight Object.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.108 FDB Heading

FDB Heading			
Name		Taxonomy	
FDB Heading		[TBD]	
Synonyms		Keywords	
Full Data Block Heading, FDB FOURTH LINE HEADING, SPEED AND FREE FORM TEXT		Full data block, heading, fourth, line, QS message	
Description			
NAS-MD-311: Controller specified heading value that is displayable in the 4 th line (Field F) of the FDB. Used in the QS message to create, change or delete stored FDB fourth line data.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Controller		Host/ERAM	
Contributors	Altering Events		
Controller	Controller specifies a different speed.		
Audience	Data Usage		
Controller	Used to share information with other ATCs about the controller-specified heading of a flight.		
Data Type	Format	Units	Range
Alphanumeric characters	NAS-MD-311: a(a)(a)(a) [User - Specified Heading Value]	N/A	N/A
Example			
H245, 245			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual	Infrequent
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
Data Transactions or Interfaces			
NAS-IC-24032410-14: RDB Flight Plan Information Message (FHI) NAS-MD-311: QS message			

FDB Heading			
Notes			
This data element might not be useful for the Flight Object.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.109 FDB Speed

FDB Speed	
<u>Name</u>	<u>Taxonomy</u>
FDB Speed	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
Full Data Block Speed, FDB FOURTH LINE HEADING, SPEED AND FREE FORM TEXT	Full data block, speed, fourth, line, QS message
<u>Description</u>	
Controller specified speed value that is displayable in the 4 th line (Field F) of the FDB. Used in the QS message to create, change or delete stored FDB fourth line data.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
Controller	HOST/ERAM
<u>Contributors</u>	<u>Altering Events</u>
Controller	Controller specifies a different speed.
<u>Audience</u>	<u>Data Usage</u>
Controller	Used to share information with other ATCs about a controller-specified speed of a flight.

FDB Speed			
Data Type	Format	Units	Range
String of characters	NAS-MD-311: In Knots: /ddd /ddd+ /ddd- / +d(d) / -d(d) /Sddd In MACH: /dd /dd+ [The first character must always be a virgule (/).] /.dd- /M(d)dd /Mdd+ /Mdd- /.dd /M.dd /.dd+ /dd- Other: /PS /+ /-	n/a	n/a
Example			
NAS-MD-311: /450, /PS, /M81, /245+, /82, /.55+			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual	Infrequent
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
NAS-MD-311, NAS-IC-24032410-14			
Data Transactions or Interfaces			
NAS-IC-24032410-14: RDB Flight Plan Information Message (FHI) NAS-MD-311: QS message			
Notes			
This data element might not be useful for the Flight Object.			

FDB Speed			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.110 Filed Route

Filed Route			
Name		Taxonomy	
Filed Route		[TBD]	
Synonyms		Keywords	
Route		Route, field 15, FPL, ICAO	
Description			
The route filed through the Flight Plan (FPL) which contains changes to the speed, level, or flight rules.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
Airspace user	Updated through a FPL amendment.		
Audience	Data Usage		
Automation (ERAM/TFMS), Traffic manager	Used by Automation to derive a trajectory.		
Data Type	Format	Units	Range
Strings of alphanumeric characters separated by spaces	[Standard Departure Route], [ATS Route Designator], [Significant Point], [Significant Point/Cruising Speed and Cruising Level], [Indicator (incomplete route, VFR, Defense VFR)], [Cruise Climb], [Standard Arrival Route]	n/a	n/a
Example			
R10 UB19 CGC UA25 DIN/N0420F330 UR14 IBY UR1 MID			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or Automated	Once through the Flight Plan and subsequently updated through a FPL amendment
Disposition			Mandatory
[TBD]			Yes

Filed Route			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Doc 4444-RAC/501 : Rules of the air and air traffic services, FAA ICAO Flight Planning Interface Reference Guide,			
<u>Data Transactions or Interfaces</u>			
ICAO FPL			
<u>Notes</u>			
In the FPL, field 15 captures the route as well as the cruising speed and level			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.111 Filed Speed

Filed Speed			
Name		Taxonomy	
Filed Speed		[TBD]	
Synonyms		Keywords	
Cruising speed		Speed, cruising, filed, field 15	
Description			
True airspeed for the first or whole cruising portion of the flight which is entered into the Flight Plan.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host / ERAM	
Contributors	Altering Events		
Airspace user	Flight Plan amendment		
Audience	Data Usage		
TFMS, ERAM	Determine estimated arrival time, calculate trajectory		
Data Type	Format	Units	Range
Alphanumeric	K (for kilometers/hour) followed by 4 numbers Or N (for knots / hour) followed by 4 numbers Or M (for Mach speed) followed by 3 numbers	n/a	n/a
Example			
N0415			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or Automated	Once thru the FPL and subsequently updated through FPL and amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
ICAO 4444:			

Filed Speed			
<u>Data Transactions or Interfaces</u>			
FPL			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.112 Filing Time

Filing Time			
<u>Name</u>	<u>Taxonomy</u>		
Filing Time	[TBD]		
<u>Synonyms</u>	<u>Keywords</u>		
None	ICAO Flight Plan, FPL, originator, filing, time		
<u>Description</u>			
The time when the flight plan was filed.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Systems which process the flight plan (ERAM, TFMS, DUATS, etc.)		flight planning service	
<u>Contributors</u>	<u>Altering Events</u>		
None	This value is set through the initial Flight Plan		
<u>Audience</u>	<u>Data Usage</u>		
DHS, Search and Rescue, FAA investigator	Potentially as part of an investigation		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of characters	6 characters: 2 day (DD), 2 hours (HH) and 2 minutes (MM)	n/a	n/a
<u>Example</u>			
170237			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Once through the Flight Plan
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL			
<u>Data Transactions or Interfaces</u>			
Used when filing a flight plan.			
<u>Notes</u>			
This information is to be completed by ATS and COM services and is not accepted by ERAM as part of the route information.			

Filing Time			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 26, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Changed "Source" from "ERAM" to "flight planning service". Added notes.

1.113 Fixes

Fixes			
Name		Taxonomy	
Fixes		[TBD]	
Synonyms		Keywords	
		Fixes, predicted, trajectory	
Description			
Current prediction of fixes along the trajectory of a flight, where these predictions are based on all the information available to TFMS.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS generates an RT message for a flight under a variety of circumstances, with the most common being the receipt of an FS, FZ, or UZ message on that flight. (An FS message is an internal message that TFMS generates when a flight in the Official Airline Guide is loaded into the active TFMS databases; this typically happens twenty-four hours before the flight is scheduled to depart.)		
Audience	Data Usage		
TFMS, airspace user, ERAM	Metering, flow control, capacity management.		
Data Type	Format	Units	Range
Array of bytes (binary data)	6 bytes per array entry	n/a	n/a
Example			
[TBD]			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	automated	Occasional (see “Altering Events”)
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
None		None	
References			
Aircraft Situation Display To Industry: Functional Description and Interface Control Document (ver. 5.4)			

Fixes			
<u>Data Transactions or Interfaces</u>			
ASDI message (RT)			
<u>Notes</u>			
This data element should be renamed "Predicted fixes"			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.114 Flight Identification

Flight Identification			
Name		Taxonomy	
Flight Identification		[TBD]	
Synonyms		Keywords	
Flight ID, flight number, aircraft identification, ACID, Call Sign		ICAO Flight Plan, FPL, flight, identification, ID, number, ACID, call sign	
Description			
Flight Identification as it will be filed on the flight plan. For an airline, this is a three-letter code and a flight number. For a GA flight, this is the tail number. This is the tag commonly used to refer to a flight.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Prior to the flight plan being filed, TFMS is the source of the current Flight Identification. After a flight plan is filed, ERAM is the source.	
Contributors	Altering Events		
Airspace user Air traffic controller	An airspace user sets the initial Flight Identification when first creating a flight in TFMS or ERAM An airspace user can modify the Flight Identification in either TFMS or ERAM after the flight is created. This might be done to stub a flight or to resolve a similar call sign problem for ATC. An air traffic controller can modify the Flight Identification by amending the flight plan in ERAM, after coordination with the pilot. This might be done to avoid a similar call sign problem.		
Audience	Data Usage		
All airspace users and systems.	Used in nearly all communications (in various forms) to address an aircraft or identify a flight.		
Data Type	Format	Units	Range
alphanumeric	2-7 characters	n/a	n/a
Example			
N14595, GAA1234, TANGO7			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
Limited for military and sensitive GA flights.	Current	Automated or manual.	Created when flight first created. Updated rarely.

Flight Identification			
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Many references, such as NAS-MD-311, ICAO 4444, CDM Message Formats, ADL Description.			
<u>Data Transactions or Interfaces</u>			
CDM messages (FC, FM, FX), ADL files, GDP/AFP messages, TFMDI messages, XFS messages, SEVEN messages.			
<u>Notes</u>			
This data element is currently used interchangeably with “Aircraft Identification”. While current systems do not delineate between the two, they are distinct data elements in a one-to-one relationship for the duration of a flight. The Flight Object most likely will keep both, with the “Aircraft Identification” being closer aligned with the aircraft registration number, while the “Flight Identification” will resemble the current GUFU/TUFI.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.115 Flight Index

Flight Index			
<u>Name</u>		<u>Taxonomy</u>	
Flight Index		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
Flight identification		Index, identification	
<u>Description</u>			
Value assigned by TFMS for flight identification purposes.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Automation		TFMS	
<u>Contributors</u>	<u>Altering Events</u>		
None	None		
<u>Audience</u>	<u>Data Usage</u>		
Automation	Used to identify all information pertaining to a particular flight.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
Numeric character	32 bit unsigned integer	N/A	N/A
<u>Example</u>			
[TBD]			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated	Once
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ASDI			
<u>Data Transactions or Interfaces</u>			
ASDI : RT message			
<u>Notes</u>			
This appears to be an internal TFMS flight identifier, and it might be superceeded by the FO Unique Identifier			

Flight Index			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.116 Flight Plan Accepted By

Flight Plan Accepted By			
<u>Name</u>		<u>Taxonomy</u>	
Flight Plan Accepted By		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
None		ICAO Flight Plan, FPL, accepted	
<u>Description</u>			
The name of the person and / or organization which accepts the flight plan in the manner prescribed by the appropriate ATS authority.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
ATS authority		Flight Planning service	
<u>Contributors</u>	<u>Altering Events</u>		
None	None		
<u>Audience</u>	<u>Data Usage</u>		
DHS, Search and Rescue, FAA investigator	Potentially as part of an investigation		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of characters	Free form alphanumeric text	n/a	n/a
<u>Example</u>			
Altoona Automated Flight Service Station (AOO AFSS)			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Once on acceptance of the Flight Plan
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL			
<u>Data Transactions or Interfaces</u>			
Used when filing a flight plan.			

Flight Plan Accepted By			
Notes			
Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]". HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Changed "Source" from "ERAM" to "flight planning service". Added notes.

1.117 Flight Plan Addressee

Flight Plan Addressee			
Name		Taxonomy	
Flight Plan Addressee		[TBD]	
Synonyms		Keywords	
None		ICAO Flight Plan, FPL, addressee, address, filing	
Description			
This field will contain AFTN addresses for enroute and destination ATC/ATS facilities. The flight plan should be transmitted (as a minimum) to each ATC/ATS facility within whose jurisdiction the flight will operate. Aircraft departing the U.S. will have the flight plan transmitted not only to the departure ARTCC, but the last domestic ARTCC in which the flight will operate, including any ARTCC with oceanic sectors in which the flight will be conducted. The aircraft operator may request that up to two additional AFTN addressees receive the message, when operational needs so dictate. The military base operations at the destination aerodrome will be included in the addressees. ICAO Flight Plan transmission is not necessarily limited to only the FIR/ATS in whose airspace the flight will be conducted. Flights in close proximity to an adjacent FIR, especially in oceanic airspace, should also be addressed to that FIR.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		[ERAM?]	
Contributor s	Altering Events		
Airspace user	This data element is set by the initial Flight Plan, and modified through subsequent amendments		
Audience	Data Usage		
ANSP, security, military	This data element is used in ATC activities, and for informing security and military organizations. It is also used for routing of messages.		
Data Type	Format	Units	Range
String of characters	Free form text containing an enumeration of addresses separated by spaces	n/a	n/a
Example			
TZSUZRZX			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once through the Flight Plan and subsequently updated through a FPL amendment

Flight Plan Addressee			
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL			
<u>Data Transactions or Interfaces</u>			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 26, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen)	Added "routing for messages" to Data Usage

1.118 Flight Plan Filed By

Flight Plan Filed By			
<u>Name</u>		<u>Taxonomy</u>	
Flight Plan Filed By		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
None		ICAO Flight Plan, FPL, filer	
<u>Description</u>			
The name of the unit, agency or person filing the flight plan			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Airspace user		flight planning service	
<u>Contributors</u>	<u>Altering Events</u>		
None	This data element is set by the initial Flight Plan and is not subsequently modified because this field only reflects the initial filer. The FO might have to contain an “Amendment Filed By” field to capture changed to the Flight Plan.		
<u>Audience</u>	<u>Data Usage</u>		
DHS, Search and Rescue, FAA investigator	Potentially as part of an investigation		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of characters	Free form alphanumeric text	n/a	n/a
<u>Example</u>			
[TBD]			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Once through the Flight Plan
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL			
<u>Data Transactions or Interfaces</u>			
Used when filing or amending a flight plan.			

Flight Plan Filed By			
Notes			
<p>This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).</p>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Changed "Source" from "ERAM" to "flight planning service". Added notes.

1.119 Flight Plan Originator

Flight Plan Originator			
<u>Name</u>		<u>Taxonomy</u>	
Flight Plan Originator		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
None		ICAO Flight Plan, FPL, originator	
<u>Description</u>			
The name of the originator of the flight plan			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Airspace user		flight planning service	
<u>Contributors</u>	<u>Altering Events</u>		
None	Set by the initial Flight Plan		
<u>Audience</u>	<u>Data Usage</u>		
DHS, Search and Rescue, FAA investigator	Potentially as part of an investigation		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of characters	Free form alphanumeric text	n/a	n/a
<u>Example</u>			
[TBD]			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Once through the Flight Plan
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL			
<u>Data Transactions or Interfaces</u>			
Used when filing a flight plan.			
<u>Notes</u>			
This information is to be completed by ATS and COM services and is not accepted by ERAM as part of the route information.			

Flight Plan Originator			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Roderick Little (Booz Allen Hamilton)	Changed "Source" from "ERAM" to "flight planning service". Added notes.

1.120 Flight Rules

Flight Rules			
Name		Taxonomy	
Flight Rules		[TBD]	
Synonyms		Keywords	
		ICAO Flight Plan, FPL, flight rules, IFR, VFR	
Description			
A value which denotes the flight rules to which the pilot plans to comply (e.g., IFR, VFR)			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
Airspace user	The Flight Rules are specified in the initial Flight Plan and can be modified by the NAS user. The value is updated through a flight plan amendment message.		
Audience	Data Usage		
TFMS, traffic managers, air traffic controllers	This information is used for separation, and level of service (e.g., IFR flights have priority over VFR, access to certain air space)		
Data Type	Format	Units	Range
Character	Upper case letter from a controlled vocabulary: {I, V, Y, Z} “I” for IFR “V” for VFR “Y” for IFR first “Z” for VFR first	n/a	n/a
Example			
V			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, and subsequently updated infrequently through a FPL amendment.

Flight Rules			
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL, FAA Order 7110.65 Message Sets: CMS, JCAB			
<u>Data Transactions or Interfaces</u>			
Used when filing or amending a flight plan.			
<u>Notes</u>			
Controller has the ability to change the status in real time via keyboard entry			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.121 Flight Status

Flight Status			
Name		Taxonomy	
Flight Status		[TBD]	
Synonyms		Keywords	
None		Flight, status, current	
Description			
Current status of the flight, based on the data TFMS has currently processed for the flight. This is currently an internal value to TFMS that is partially expressed through the ETD prefix. We propose a new, discrete data element with values: Planned, Filed, Delayed, Taxiing-out, Airborne, Taxiing-in, Completed, Canceled.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	When TFMS creates a flight, it will set the initial flight status. TFMS will then update the status as data is processed for that flight. Processing a flight plan will change the status to “Filed”. Processing an “out” message will change the status to “Taxiing-out”. Processing a departure message will change the status to “Active”. Processing an arrival message will change the status to “Taxiing-in”. Processing an “in” message will change the status to “Completed”. Prior to departure, processing a cancel message will change the status to “Cancelled”.		
Audience	Data Usage		
Traffic manager Airspace users TFMS	Traffic managers and airspace users would use Flight Status as a quick indication of the current phase of flight operation. TFMS uses the status to determine how to model a flight and how to treat a flight in a GDP or AFP.		
Data Type	Format	Units	Range
alphanumeric	One string from a controlled vocabulary: {Planned, Filed, Taxiing-out, Airborne, Taxiing-in, Completed, Canceled}	n/a	n/a
Example			
Planned			

Flight Status			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Future	Automated	Set when flight created, modified occasionally.
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
None			
<u>Data Transactions or Interfaces</u>			
None			
<u>Notes</u>			
This is a proposed future data element that would in part replace the ETD prefix the currently appears in the ADL files.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.122 Global Unique Flight Identifier (GUFI)

GUFI			
Name		Taxonomy	
GUFI		[TBD]	
Synonyms		Keywords	
None		Flight, identification, ID	
Description			
Identifier which uniquely defines a flight in ERAM			
Has Parts		Is Part Of	
None		None	
Creator		Source	
ERAM		ERAM	
Contributors	Altering Events		
n/a	The value of the GUFI is created by ERAM and does not change throughout the life of the flight		
Audience	Data Usage		
ERAM and all other systems which interact with ERAM	This data element identifies the flight in all ERAM data interchanges which refer to a specific flight		
Data Type	Format	Units	Range
String of characters	10 characters, ASCII ABnnnnnnnn AB differs by country; in the USA, A="K" (ICAO country code of USA) and B is the single character Facility ID; for ARTCC, B is one of A=ZAB, G=ZAU, B=ZBW, W=ZDC, D=ZDV, F=ZFW, H=ZHU, I=ZID, J=ZJX, K=ZKC, L=ZLA, U=ZLC, R=ZMA, M=ZME, P=ZMP, N=ZNY, O=ZOA, C=ZOB, S=ZSE, T=ZTL. nnnnnnnn=8-digit timestamp and sequence number combination	n/a	n/a
Example			
KT26822208			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Generated by ERAM	Once

GUF I			
<u>Disposition</u>			<u>Mandat ory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ERAM documentation			
<u>Data Transactions or Interfaces</u>			
Used in all transactions which involve, or pertain to a certain flight			
<u>Notes</u>			
The GUF I format detailed above ensures that the identifier will be in fact unique across all systems			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 26, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen)	Added previously missing format details

1.123 Great Circle Distance

Great Circle Distance			
Name		Taxonomy	
Great Circle Distance		[TBD]	
Synonyms		Keywords	
GCD		TFMS, CDM, ADL	
Description			
Indicates the great circle distance, in nautical miles, between the origin and the destination airports.			
Has Parts		Is Part Of	
n/a		n/a	
Creator		Source	
TFMS		TFMS	
Contributor s	Altering Events		
TFMS	Set when flight created. Change if flight rerouted to an alternate destination airport.		
Audience	Data Usage		
FSM	FSM uses this value to exempt flights with GCDs greater than a set amount when computing a GDP. This is known as a distance-based GDP.		
Data Type	Format	Units	Range
integer	dddddd	nautical miles	0 - 99999
Example			
427, 2130			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	Current	automated	Once, updated rarely
Disposition			Mandat ory
			Yes
Requires		Is Required By	
arrival and departure airports		n/a	
References			
Distance Based FA Delay System Requirements Document, ADL Description			
Data Transactions or Interfaces			
ADL Reports, FSM			
Notes			

Version	Date	Author	Description of Changes
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.124 Ground Speed

Ground Speed			
Name		Taxonomy	
Ground Speed		[TBD]	
Synonyms		Keywords	
		Ground, speed	
Description			
The speed of an aircraft relative to the surface of the earth, either closing speed to a station or waypoint, or speed over the ground in whatever direction the aircraft is going at the moment, depending upon the navigation system used.			
.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation		Automation	
Contributors	Altering Events		
Automation	Updated surveillance data		
Audience	Data Usage		
ANSP, Airspace Users	Determining airport arrival rate (AAR); speed identifier; modifier in determining frequency of position reporting (NAO Chapter 8 Comm)		
Data Type	Format	Units	Range
String of numeric characters	3 digits;ddd	Nautical miles/hour	000 if unknown, greater than 0 if known
Example			
098			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]		Automated	Frequent
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Ground Speed			
References			
ASDI Functional Description and Interface Control Document Version 5.4, Interface Control Document for FAA-JCAB Data Exchange Draft 0.4, R3			
Data Transactions or Interfaces			
ASDI Message (TZ)			
Notes			
Version	Date	Author	Description of Changes
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.125 Hold Fix

Hold Fix			
Name		Taxonomy	
Hold Fix		[TBD]	
Synonyms		Keywords	
None		ICAO Flight Plan, FPL, hold, fix	
Description			
The Hold Fix is any valid fix that is designated by a controller to suspend progress of a flight by designating a time and a hold leg length. Hold Fixes may be defined dynamically (unpublished) or statically (published).			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation, controller		Host/ERAM	
Contributor s	Altering Events		
Automation, controller	Controller might change hold fix at his/her discretion		
Audience	Data Usage		
Airspace users, Automation	When a Hold message is entered by a controller, the designated fix becomes a Hold Fix. Upon removal of the Hold, the fix no longer is designated a Hold fix.		
Data Type	Format	Units	Range
String of alphanumeric characters	aa(a)(a)(a)(/)(a)(a)(a)(a)(a) for fix name or dddd(L)/(d)dddd(L) for Lat/Long or aa(a)(a)(a)dddddd for Fix Radial Distance	Lat/long-Degrees and minutes	n/a
Example			
IRONS, 4215/9045			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
n/a	Current	Manual	Created whenever a flight must absorb a delay larger than can be achieved by speed or altitude changes or vectoring
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Hold Fix			
<u>References</u>			
Numerouse; NAS-MD-311, NAS-MD-314, NAS-MD-315			
<u>Data Transactions or Interfaces</u>			
Intra-facility HM and QH messages Message Sets: CMS			
<u>Notes</u>			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Substituted "suspend progress" for "delay"

1.126 ICAO EET Indicator

ICAO EET Indicator			
<u>Name</u>		<u>Taxonomy</u>	
EET Indicator		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
None		ICAO Flight Plan, FPL, EET, estimated time enroute, enroute, field 18	
<u>Description</u>			
Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Airspace user		ERAM	
<u>Contributors</u>	<u>Altering Events</u>		
Airspace user	The EET Indicator is set in the initial Flight Plan and can be updated through a flight plan amendment		
<u>Audience</u>	<u>Data Usage</u>		
ANSP	[?]		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of characters	Concatenation of multiple strings separated by a space character. Each string is a fix or FIR boundary designator code followed immediately by a 4 digit time (HHMM) representing the time enroute to reach the fix (see example).	n/a	n/a
<u>Example</u>			
CAP0745 XYZ0830			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Once through the Flight Plan and subsequently updated through a FPL amendment
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes

ICAO EET Indicator			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL			
<u>Data Transactions or Interfaces</u>			
Used when filing or amending a flight plan.			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen)	Confirmed ERAM as the source for this data element.

1.127 In Delay Program

In Delay Program			
Name		Taxonomy	
In Delay Program		[TBD]	
Synonyms		Keywords	
None		Delay, program, controlled	
Description			
Indicator of whether a flight is currently controlled in a delay program (GDP, GS, or AFP), or was controlled by a delay program at the time it operated. This is not an existing element, but is a proposed new element that contains the delay program status currently shown in the ETA prefix.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS will set In Delay Program to FALSE when creating a flight. TFMS will set In Delay Program to TRUE whenever it applies GDP, GS, or AFP control times to a flight. TFMS will set In Delay Program to FALSE if the controlling program is purged prior to the flight operating.		
Audience	Data Usage		
Traffic managers Airspace users	Traffic managers and airspace users would use this element as a quick indication of whether the flight is being affected by a delay program.		
Data Type	Format	Units	Range
Boolean	One of {TRUE,FALSE}	n/a	n/a
Example			
TRUE			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Future	automated	Rare.
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
None			
Data Transactions or Interfaces			
None			

In Delay Program			
Notes			
This is a new data element proposed to replace, in part, the ETA prefix.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.128 Initial Entry (IENTRY)

Initial Entry (IENTRY)			
Name		Taxonomy	
Initial Entry (IENTRY)		[TBD]	
Synonyms		Keywords	
Initial Element Entry Time		Initial, entry, time, IENTRY, element	
Description			
IENTRY represents the time originally planned to enter an FEA or FCA. IENTRY plays a similar role for an AFP that IGTA plays for a GDP in that it is used to determine the order in which flights should be assigned to slots. In many cases, the FCA does not exist at the time a flight is created. IENTRY is computed as the estimate of when the flight would have entered the FCA if the FCA had existed when the flight was created. This is computed, simply, as the IGTD plus the flying time to the FCA entry point, as modeled when the FCA is actually created; that is, IENTRY = IGTD + (ENTRY - ETD). IENTRY is computed only for FSM-eligible FCAs.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS computes IENTRY once for a flight, for a given FCA. If the flight is created when the FCA already exists, TFMS computes IENTRY then. If the FCA is created after the flight exists, TFMS computes IENTRY then.		
Audience	Data Usage		
TFMS	IENTRY is used by TFMS (FSM) to determine which flights are to be given slots in an AFP, and the priority order for allocating flights to slots in an AFP.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
280944			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	automated	Once per flight per FCA.
Disposition			Mandatory
Exists until the flight is no longer affected by the FEA/FCA, or the FEA/FCA is disposed of.			No

Initial Entry (IENTRY)			
<u>Requires</u>		<u>Is Required By</u>	
Associated with an FEA or FCA		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.129 Initial Gate Time of Arrival (IGTA)

Initial Gate Time of Arrival (IGTA)			
Name		Taxonomy	
Initial Gate Time of Arrival (IGTA)		[TBD]	
Synonyms		Keywords	
None		Initial, gate, time, arrival, IGTA	
Description			
The original gate arrival time of the flight when the flight is first created. Is used during GDP processing to determine the order in which flights should be assigned to slots. This preserves the “rights” of a flight in a GDP or AFP in the case that the flight is delayed prior to the GDP/AFP being issued.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user OAG ERAM TFMS	When TFMS creates a flight, it saves the gate arrival time from whatever message created the flight as the IGTA. There are three source of data that cause a flight to be created: OAG schedule data, CDM message (from the airspace user), or a flight plan. The IGTA is therefore set to either the scheduled OAG arrival time, the LGTA from the first CDM message, or the planned arrival time from the flight plan. An exception to the above is the creation of a diversion recovery flight (see Diversion Recovery). In this case, TFMS uses the IGTA from the flight being recovered as the IGTA for the recovery flight. This gives the recovery flight a higher priority in the slot assignments when a GDP or AFP is issued or revised.		
Audience	Data Usage		
TFMS	When TFMS (FSM) assigns arriving flights to FCA slots, it orders the flights by their IGTA.		
Data Type	Format	Units	Range
String of numeric characters	6 digits for day, hour, minute (DDHHMM), zero padded	n/a	valid date and time
Example			
310814, 012345			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	automated	Set once when flight is created and never changed.

Initial Gate Time of Arrival (IGTA)			
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ADL Description			
<u>Data Transactions or Interfaces</u>			
ADL files			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.130 Initial Gate Time of Departure (IGTD)

Initial Gate Time of Departure (IGTD)			
Name		Taxonomy	
Initial Gate Time of Departure (IGTD)		[TBD]	
Synonyms		Keywords	
Original Departure Date/Time, Original UTC Departure Date/Time, ODDT		Initial, gate, time, departure, IGTD, original, UTC, ODDT	
Description			
Date and time at which a flight was originally planning to depart the gate. This is used in TFMS to distinguish one flight from another when the same Flight ID, origin, and destination appear for two different flights. For CDM message exchange, the Flight ID, Origin, Destination, and IGTD together form a unique flight identifier.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user OAG ERAM TFMS	When TFMS creates a flight, it saves the gate departure time from whatever message created the flight as the IGTD. There are three source of data that cause a flight to be created: OAG schedule data, CDM message (from the airspace user), or a flight plan. The IGTD is therefore set to either the scheduled OAG departure time, the LGTD from the first CDM message, or the planned departure time from the flight plan.		
Audience	Data Usage		
TFMS Airspace users	Used as part of the unique identification of a flight leg in CDM data exchange (includes GDP and AFP data exchange).		
Data Type	Format	Units	Range
String of numeric characters	IGTD uses ddhhmm; ODDT uses mmddhhmm.	n/a	Valid date and time
Example			
06261225 (ODDT), 261225 (IGTD)			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Once
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Initial Gate Time of Departure (IGTD)			
<u>References</u>			
CDM Message Formats; ICD for GDPs and AFPs			
<u>Data Transactions or Interfaces</u>			
CDM messages, GDP/AFP messages, ADL files.			
<u>Notes</u>			
<p>IGTD and ODDT exist in two different formats, but have the same meaning, value, and usage and so should be collapsed into one field.</p> <p>It is expected that the use of this field as a unique flight identifier would be replaced by a unique flight identifier field.</p>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.131 Interim Altitude

Interim Altitude			
Name		Taxonomy	
Interim Altitude		[TBD]	
Synonyms		Keywords	
		Interim, Altitude	
Description			
Aircraft is cleared to maintain an altitude different from that in the flight plan database is an interim altitude of the aircraft that will (climb or descend to and) maintain the new altitude for a short period of time and subsequently be recleared to the altitude in the flight plan database or a new altitude or a new interim altitude.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Controller		Host / ERAM	
Contributors	Altering Events		
Controller	New interim altitude assigned by controller		
Audience	Data Usage		
Airspace User, TFMS	Automation en route; temporary altitude modification		
Data Type	Format	Units	Range
String of numeric characters	ddd	Hundreds of feet	000-999
Example			
058			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual	Occasional
Disposition			Mandator y
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
NAS MD 311;			
Data Transactions or Interfaces			
CMS message (FHI)			
Notes			

Interim Altitude			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.132 Life Jackets

Life Jackets			
Name		Taxonomy	
Life Jackets		[TBD]	
Synonyms		Keywords	
None		ICAO Flight Plan, FPL, floatation, device, water, survival, life preserver, life belt, lifeline	
Description			
Personal flotation devices carried on aircraft for emergency situations			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		flight planning service	
Contributors	Altering Events		
Airspace user	Initial value set through the Flight Plan can be modified through a FPL amendment due to changes of airplane prior to departure.		
Audience	Data Usage		
Search and Rescue	Used by search and rescue teams during an emergency situation		
Data Type	Format	Units	Range
String of alphanumeric characters	Format reflects type of signaling device (Light/Fluorescent Markings/UHF/VHF)	N/A	N/A
Example			
J / L F			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.			

Life Jackets			
<u>Data Transactions or Interfaces</u>			
Information captured when flight plan filed, or amended. Information is read when transferred to search and rescue			
<u>Notes</u>			
<p>Additional characteristics of life jackets are whether they are equipped with lights, fluorescent, and/or radio capability.</p> <p>This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).</p>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Changed "Source" from "None" to flight planning service". Added notes.

1.133 MAJOR

MAJOR				
Name		Taxonomy		
MAJOR		[TBD]		
Synonyms		Keywords		
none		CDM, TFMS, ADL		
Description				
Indicates the organization within which this flight will be considered when RBS++ is computed (that is, all flights with the same MAJOR value are considered together during the intra-airline swapping portion of RBS++ and Compression). The MAJOR code can indicate an actual air carrier, a general aviation fleet operator, or a pseudo carrier used to logically group certain flights. If the MAJOR code is three letters, it is an official three-letter code that can be used for flight plan filing. If the MAJOR starts with a period character (.), it is a dummy code used only within ETMS. Dummy codes are used for any organization, such as a GA data provider, that is a CDM Participant but does not have an official three-letter code.				
Has Parts		Is Part Of		
n/a		n/a		
Creator		Source		
TFMS		TFMS		
Contributor s	Altering Events			
TFMS	Is set when flight created based on flight ID and adaptation data.			
Audience	Data Usage			
TFMS	Used for computing GDPs and AFPs. Used by Adaptive Compression.			
Data Type	Format	Units	Range	
alpha	LLL(L) or .LL	n/a	n/a	
Example				
AAL,				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
		Current	automated	once
Disposition				Mandat ory
				no
Requires		Is Required By		
n/a		n/a		
References				
ADL Description				

MAJOR			
<u>Data Transactions or Interfaces</u>			
ADL Reports			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.134 Number of Aircraft

Number of Aircraft			
Name		Taxonomy	
Number of Aircraft		[TBD]	
Synonyms		Keywords	
NUM		ICAO Flight Plan, FPL, aircraft, number, formation	
Description			
Number of aircraft in flight			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace User		Host / ERAM	
Contributors	Altering Events		
Controllers	Set through the initial Flight plan and modified through a FPL amendment. Controllers, will sometimes modify the number of aircraft as well.		
Audience	Data Usage		
ANSP	Determines separation requirements due to number of aircraft		
Data Type	Format	Units	Range
1 or 2 numeric characters	d(d)	n/a	n/a
Example			
8			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
- Annex 2/3 to the Convention of International Civil Aviation, International Standards — Rules of the Air, Interface Control Document for FAA-JCAB Data Exchange - NAS MD 311 - [7110.65?]			
Data Transactions or Interfaces			
Message Sets: CMS, ICAO FPL, JCAB, ASDI			

Number of Aircraft			
Notes			
ICAO Field 9a			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 2, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	"Controllers" added to the "Contributors" field. Enhanced "Altering Events". Deleted additional formats beyond "d(d)".

1.135 Off-block Time

Off-block Time			
Name		Taxonomy	
Off-block Time		[TBD]	
Synonyms		Keywords	
Push back time, Gate departure time		Off-block, time	
Description			
The estimated time at which the aircraft will commence movement associated with departure			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
Airspace user, Controller	Possible rare updates if the aircraft returns to the gate after an initial push off.		
Audience	Data Usage		
Automation, Controller	Determining departure		
Data Type	Format	Units	Range
String of characters	dddd for HHMM	n/a	n/a
Example			
2359			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automatic	Once with possible rare updates
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
NAS MD 311			
Data Transactions or Interfaces			
[TBD]			

Off-block Time			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.136 Original Departure Airport

Original Departure Airport			
Name		Taxonomy	
Original Departure Airport		[TBD]	
Synonyms		Keywords	
		Original, Departure, Airport	
Description			
The Original Departure Airport is the Departure Airport specified in a Flight Plan when it is filed for the first time. Subsequent amendments which modify the Departure Airport leave the Original Departure Airport unchanged because the Original Departure Airport is used by TFMS to uniquely identify the flight.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace User		Host / ERAM	
Contributors	Altering Events		
None	None		
Audience	Data Usage		
TFMS	Identifies the original point of departure		
Data Type	Format	Units	Range
String of alphanumeric characters	aaaa - four letter airport code	n/a	n/a
Example			
KLAX			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or automated	Once when the initial Flight Plan is filed
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Interface Control Document for FAA-JCAB Data Exchange Draft 0.4, R3			
Data Transactions or Interfaces			
JCAB message (CHG)			

Original Departure Airport			
Notes			
This data element is required when amending a Flight Plan.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.137 Original Destination

Original Destination			
Name		Taxonomy	
Original Destination		[TBD]	
Synonyms		Keywords	
Original Destination Airport		Destination, original, arrival	
Description			
The Original Destination Airport is the Destination Airport submitted when a Flight Plan was initially filed. Subsequent amendments might change the Destination Airport for the flight, but the Original Destination Airport will not be modified because TFMS uses this information to identify the original flight.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
None	None		
Audience	Data Usage		
ANSP	Used to identify the original flight plan once an amendment is made.		
Data Type	Format	Units	Range
String of characters	4 letters (LLLL) representing the airport code of the original destination of the flight	N/A	N/A
Example			
KLAX, RJAA			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated/manual	Once via flight plan
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
FAA-JCAB Data Exchange			
Data Transactions or Interfaces			
FAA-JCAB Data Exchange: Flight Plan Amendment Message (CHG)			

Original Destination			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.138 Original Flight Identification

Original Flight Identification			
Name		Taxonomy	
Original Flight Identification		[TBD]	
Synonyms		Keywords	
None		Original, flight, identification, ID, diversion, recovery	
Description			
When an airspace user creates a Diversion Recovery flight, they can identify the original, diverted flight for which the new flight is a recovery. This identification consists of the Flight ID and ODDT for the original flight; in this context, these are referred to as the Original Flight Identification and the Original ODDT. Identifying the original, diverted flight allows TFMS to treat the recovery flight with the same priority that the original flight had when computing GDPs and AFPs.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Optionally defined when a diversion recovery flight is sent to TFMS using a CDM message.		
Audience	Data Usage		
TFMS	Used to transfer the arrival slot and/or IGTA from the original diverted flight to the recovery flight.		
Data Type	Format	Units	Range
alphanumeric	2-7 characters	n/a	n/a
Example			
N14595, GAA1234			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Rare
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
Must be paired with Original ODDT		None	
References			
CDM Message Formats			
Data Transactions or Interfaces			
CDM Flight Create (FC) message (optional)			

Original Flight Identification

Notes

If the recovery flight has the same Flight Identification as original flight, TFMS will automatically identify it. The airspace user needs to send the Original Flight Identification and Original IGTA only when the Flight Identification is different; for example, if flight AAL 123 is a recovery for flight AAL456.

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.139 Original ODDT

Original ODDT			
Name		Taxonomy	
Original ODDT		[TBD]	
Synonyms		Keywords	
None		Original, departure, date, time, diversion, recovery	
Description			
See Original Flight Identification.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Defined when the diversion recovery flight is created. It should not change.		
Audience	Data Usage		
TFMS	Used to transfer the arrival slot and priority from a diverted, controlled flight to the recovery leg for that flight.		
Data Type	Format	Units	Range
String of numeric characters	8 digits for month, day, hour, minute (MMDDHHMM), zero padded	n/a	valid date and time
Example			
12051439			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	Current	automated	Once
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
Must be paired with Original Flight Identification		None	
References			
CDM Message Formats			
Data Transactions or Interfaces			
CDM messages.			
Notes			
See Original Flight Identification.			

Original ODDT			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Claire Morton (Volpe)	Initial version for review.

1.140 Persons on Board

Persons On Board			
<u>Name</u>		<u>Taxonomy</u>	
Persons On Board		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
Souls on board		ICAO Flight Plan, FPL, persons, passengers, crew, people, souls, board	
<u>Description</u>			
The number of people on board, including passengers and crew			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Airspace user		flight planning service	
<u>Contributors</u>	<u>Altering Events</u>		
Airspace user	Set through the initial Flight Plan and potentially modified through FPL amendments		
<u>Audience</u>	<u>Data Usage</u>		
Air Traffic Control, Crash Fire Rescue (CFR)	Used for crash fire rescue (CFR), currently provided by the pilot to the controller via voice communication		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of numeric characters	c(c)(c) (up to three characters) Integer number if the number is known when the flight plan is filed, or the string “TBN” if the number is unknown at that time	n/a	n/a
<u>Example</u>			
256			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Once through the Flight Plan and subsequently updated infrequently through a FPL amendment
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes

Persons On Board			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICAO FPL, [7110.65?]			
<u>Data Transactions or Interfaces</u>			
Used when filing or amending a flight plan.			
<u>Notes</u>			
<p>Currently the data is obtained manually and is required by letters of agreement between airport authorities and FAA. The FO will provide an automated way of reporting this data.</p> <p>This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).</p>			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Changed "Source" from "None" to "flight planning service". Added notes.

1.141 Pilot in Command

Pilot In Command			
Name		Taxonomy	
Pilot In Command		[TBD]	
Synonyms		Keywords	
PIC		ICAO Flight Plan, FPL, pilot, name, PIC	
Description			
The name of the pilot in command of the aircraft			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		flight planning service	
Contributors	Altering Events		
Airspace user	Set by initial Flight Plan and potentially modified through subsequent FPL amendments by aircraft operator		
Audience	Data Usage		
Search and Rescue, FSS, DHS	Currently the pilot name is only used for search and rescue purposes and might be used by Homeland Security (DHS)		
Data Type	Format	Units	Range
String of characters	Freeform alphanumeric	n/a	n/a
Example			
"J. Doe"			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once through the Flight Plan and subsequently updated infrequently through a FPL amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
ICAO FPL, FAA Order 7110.65			

Pilot In Command			
Data Transactions or Interfaces			
Used when filing or amending a flight plan.			
Notes			
<p>Currently this data element is not used by the NAS systems. This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]. HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).</p>			
Version	Date	Author	Description of Changes
1.0	May 14, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Changed "Source" from "None" to "flight planning service". Added notes.

1.142 Planned Position

Planned Position			
Name		Taxonomy	
Planned Position		[TBD]	
Synonyms		Keywords	
		Oceanic, position report, planned, position, JCAB	
Description			
An estimated future-time position of the aircraft transmitted by JCAB as a result of an Oceanic Position Report, via the “Oceanic Report (TIO)” message.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user (most likely through a PIREP)		Host/ERAM	
Contributors	Altering Events		
Airspace user	Created as the result of a PIREP, cockpit data link, and possibly by a controller. Updated when new Oceanic Position Reports are received for the flight		
Audience	Data Usage		
TFMS, Airspace Users	This data element is used to estimate the aircraft trajectory when there is no radar surveillance data.		
Data Type	Format	Units	Range
String of alphanumeric characters	<ul style="list-style-type: none">Latitude: in degree decimal. Latitude should be followed by N/S. Minutes and seconds are converted to decimal degrees. For example 34 degrees,30 minutes and 45 seconds = 34.575 degreesLongitude: in degree decimal. Longitude should be followed by E/W.Altitude: Fddd, (equivalent of field 15b in ICAO FPL)Planned Time: 14 digits giving date-time in UTC yyyymmddhhmmss format	n/a	n/a
Example			
40.0401N 076.41W F350 20091010122000			

Planned Position			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Current	Automated or manual	Provided occasionally as Oceanic Position Reports come in.
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			No
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Interface Control Document for FAA-JCAB Data Exchange			
<u>Data Transactions or Interfaces</u>			
JCAB message(TIO)			
<u>Notes</u>			
The JCAB TIO message contains 2 consecutive planned positions			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.143 Progress Report Fix

Progress Report Fix			
Name		Taxonomy	
Progress Report Fix		[TBD]	
Synonyms		Keywords	
None		Position, update, progress, fix, active flight,	
Description			
The position part of a progress report message, which is used to update the position of an active flight plan, or release it from a prior hold status.			
Has Parts		Is Part Of	
none		none	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
Airspace user	Modified when a progress report is entered into the HCS (Host Computer System)		
Audience	Data Usage		
Airspace users Traffic managers Controllers TFMS, ERAM	Progress report data is used to gain situational awareness.		
Data Type	Format	Units	Range
String of characters	Dddd(L)/(d)dddd(L) for latitude/longitude or aa(a)(a)(a) for fix name or aa(a)(a)(a)dddddd for fix and radial distance	n/a	n/a
Example			
[TBD]			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Manual	Updated occasionally
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
An associated Progress Report Time		Progress Report Time	

Progress Report Fix			
References			
ICD NAS-IC-24032410-14			
Data Transactions or Interfaces			
CMS messages (PH, FHI)			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.144 Progress Report Time

Progress Report Time			
<u>Name</u>		<u>Taxonomy</u>	
Progress Report Time		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
		Position, update, progress, time, active flight	
<u>Description</u>			
The time component of a progress report message, which is used to update the position of an active flight plan, or release it from a prior hold status.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Airspace user		Host/ERAM	
<u>Contributors</u>	<u>Altering Events</u>		
Airspace user	Modified when a progress report is entered into the HCS (Host Computer System)		
<u>Audience</u>	<u>Data Usage</u>		
Airspace users, Traffic managers, Controllers TFMS, ERAM	Progress report data is used to gain situational awareness.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
timestamp	dddd representing (HHMM)	n/a	n/a
<u>Example</u>			
[TBD]			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Manual	Updated occasionally
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			No
<u>Requires</u>		<u>Is Required By</u>	
An associated Progress Report Fix		Progress Report Fix	
<u>References</u>			
ICD NAS-IC-24032410-14			
<u>Data Transactions or Interfaces</u>			
CMS messages (PH, FHI)			

Progress Report Time			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.145 Proposed Departure Time

Proposed Departure Time			
Name		Taxonomy	
Proposed Departure Time		[TBD]	
Synonyms		Keywords	
P time,		proposed, departure, time, P	
Description			
The time a scheduled flight will depart the gate (scheduled operators) or the actual runway off time for nonscheduled operators. For EDCT purposes, the ATCSCC adjusts the proposed departure time for scheduled operators to reflect the runway off times.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host/ERAM	
Contributors	Altering Events		
Airspace user, Automation	Flight plan amendment.		
Audience	Data Usage		
Airspace user, Automation	Traffic management, trajectory generations by TFMS		
Data Type	Format	Units	Range
String of numeric characters	dddd to represent time as HHMM	n/a	n/a
Example			
2359			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automatic or manual	Once thru the FPL and subsequently updated through FPL and amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		EDCT	
References			
NAS-MD-311			

Proposed Departure Time			
Data Transactions or Interfaces			
CMS message (FHI)			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.146 Protected Area

Protected Area			
Name		Taxonomy	
Protected Area		[TBD]	
Synonyms		Keywords	
protected segment		XFS, TFMS, ERAM, TSD	
Description			
The portion of an assigned reroute that is important to preserve in order to achieve the goal of a Traffic Management Initiative (TMI). It is an explicit route segment, and must begin and end with a named fix or airport.			
Has Parts		Is Part Of	
n/a		none	
Creator		Source	
Traffic manager		TFMS	
Contributors	Altering Events		
Traffic manager TFMS (TSD)	The traffic manager creates the default protected segment for each assigned route in a reroute and can amend it using the Create/Edit Reroute functions of the TFMS Traffic Situation Display (TSD). If a user files a flight plan conformant with an assigned route, TFMS automatically assign the default protected segment to that flight. If a traffic manager manually amends a flight’s route, the traffic manager can manually set the protected segment.		
Audience	Data Usage		
TFMS ERAM En route controller	TFMS uses it to determine the assigned route for a flight. TFMS may combine origin and destination segments to create the full protected segment. ERAM uses the protected segment to prevent its assigning adapted routes that change the protected segment. ERAM displays the protected segment to prevent casual changes to the protected segment by the en route controller.		
Data Type	Format	Units	Range
String	Fix, airport, and route codes separated by spaces.	n/a	up to 256 characters
Example			
BNA J42 BKW			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	planned	Manual	Occasional
Disposition			Mandatory
			no

Protected Area			
<u>Requires</u>		<u>Is Required By</u>	
Assigned route		None.	
<u>References</u>			
XFS System Requirements, ICD for TSD-XFS Interfaces			
<u>Data Transactions or Interfaces</u>			
TFM Reroute messages			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.147 Receiving Facility

Receiving Facility			
Name		Taxonomy	
Receiving Facility		[TBD]	
Synonyms		Keywords	
Facility Identifier		facility, receiving	
Description			
Designates the ATC facility receiving control of the aircraft			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Automation (Host/ERAM)		Automation (Host/ERAM)	
Contributors	Altering Events		
Host/ERAM, Controller	Updated when control of an aircraft is transferred from the controlling ATC facility to another ATC facility (handoff of track)		
Audience	Data Usage		
TFM, ATC, and Automation	Identifies the ATC facility receiving track control of a flight.		
Data Type	Format	Units	Range
String of alphanumeric characters	1 or 3 characters - L or LLL representing facility codes	n/a	n/a
Example			
ZOB, ZNY, ZAB, X (for Central Flow Control)			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once when the FPL is filed, updated when track control transfers inter-facility
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	

Receiving Facility			
References			
Numerous, such as NAS-MD-311, NAS-IC-24032410-14			
Data Transactions or Interfaces			
Track Information Messages, (field 138a). Inter-facility and inter-sector track related messages, PO, TI, TU, TA Message Sets: CMS			
Notes			
Often used in conjunction with sector identifier, e.g., Facility/Sector - LLL/da			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen)	Removed “manual progress entry by the controller” from Altering Events.

1.148 Receiving Sector

Receiving Sector			
<u>Name</u>		<u>Taxonomy</u>	
Receiving Sector		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
Sector Identifier		Sector, receiving	
<u>Description</u>			
Designates the ATC sector position receiving control of the aircraft			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Automation (Host/ERAM)		Automation (Host/ERAM)	
<u>Contributor s</u>	<u>Altering Events</u>		
Host/ERAM, Controller	Updated when control of an aircraft is transferred from one sector position to another either within an en route ATC facility or between en route and terminal facilities		
<u>Audience</u>	<u>Data Usage</u>		
TFM, ATC, Automation	Used to identify sector positions in en route and terminal ATC facilities.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of alphanumeric characters	3 characters representing facility followed by 2 characters identifying sector/position (dd or da)	n/a	n/a
<u>Example</u>			
ZDC50			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automated or manual	Updated frequently when track control transfers via handoff
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
Numerous, such as; NAS-MD-311, 315, NAS-IC-24032410-14			
<u>Data Transactions or Interfaces</u>			
Inter-facility and Inter-sector track messages ; TI, TA, TU Message Sets: CMS			

Receiving Sector			
<u>Notes</u>			
Often used in conjunction with facility identifier, e.g., Receiving Facility/Sector - LLL/da			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Jim Enders (Booz Allen Hamilton)	Initial version for review.

1.149 Relative Flight Priority

Relative Flight Priority			
<u>Name</u>		<u>Taxonomy</u>	
Relative Flight Priority		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
REL_FLT_PRIORITY, RFP		SEVEN, TFMS	
<u>Description</u>			
The relative flight priority (RFP) can be used by the flight operator to indicate the relative priority of its own flights. The SEVEN algorithm attempts to give better treatment to higher priority flights within the slots that have been assigned to that flight operator. The RFP does not affect how one flight operator is treated as compared to another. If the flight operator does not wish to prioritize their flights, it can omit this field from all its Trajectory Option Sets (TOS).			
<u>Has Parts</u>		<u>Is Part Of</u>	
n/a		TOS	
<u>Creator</u>		<u>Source</u>	
airspace user		Flight Operator System (FOS)	
<u>Contributors</u>	<u>Altering Events</u>		
airspace user	Set by user whenever a TOS is generated.		
<u>Audience</u>	<u>Data Usage</u>		
TFMS (SEVEN)	Used by SEVEN to make decisions about flight slots and trajectories.		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
Integer	d+	n/a	1 - number of flights
<u>Example</u>			
20			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
	planned	automated	occasional
<u>Disposition</u>			<u>Mandatory</u>
			no
<u>Requires</u>		<u>Is Required By</u>	
n/a		n/a	
<u>References</u>			
Interface Control Document for SEVEN			
<u>Data Transactions or Interfaces</u>			
SEVEN messages			

<u>Notes</u>			
A lower number means a higher priority.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.150 Relative Trajectory Cost

Relative Trajectory Cost			
Name		Taxonomy	
Relative Trajectory Cost		[TBD]	
Synonyms		Keywords	
REL_TRAJ_COST		SEVEN, TFMS	
Description			
The relative cost of one trajectory as compared to another for this flight expressed in minutes of delay.			
Has Parts		Is Part Of	
n/a		n/a	
Creator		Source	
airspace user		TFMS	
Contributors	Altering Events		
airspace user	Set for each trajectory option whenever a TOS is generated.		
Audience	Data Usage		
TFMS (SEVEN)	Used by SEVEN to compute the lowest overall cost for a given trajectory option by adding this value to the SEVEN-generated delay.		
Data Type	Format	Units	Range
integer	d+	Minutes	n/a
Example			
30			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	planned	Automated	occasional
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		Trajectory option	
References			
Interface Control Document for SEVEN			

<u>Data Transactions or Interfaces</u>			
SEVEN messages			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.151 Remarks

Remarks			
Name		Taxonomy	
Remarks		[TBD]	
Synonyms		Keywords	
RMK		RMK, remark, comment,	
Description			
Any information the Pilot in Command (PIC) and / or Operator believes is necessary to be provided to ATC. One common remark is "SSNO", which means the PIC is unable or unwilling to accept a SID or STAR on an IFR flight			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		flight planning service	
Contributors	Altering Events		
Airspace user	Flight Plan amendment		
Audience	Data Usage		
ERAM, TFMS	Additional information the FPL filing operator feels is germane to the flight and not already addressed		
Data Type	Format	Units	Range
String of characters	Characters - Free Text	n/a	n/a
Example			
12 reindeers will require additional care and feeding after arrival			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once through the Flight Plan and subsequently updated through FPL amendments
Disposition			Mandatory
[TBD]			No
Requires		Is Required By	
None		None	
References			
FAA ICAO Flight Planning Interface Reference Guide			
Data Transactions or Interfaces			
ICAO FP			

Remarks			
Notes			
<p>This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]". HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).</p>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Tim Reynolds (Booz Allen Hamilton)	Changed "Source" from "FPL" to "flight planning service". Added notes.

1.152 Reported Altitude

Reported Altitude			
<u>Name</u>		<u>Taxonomy</u>	
Reported Altitude			
<u>Synonyms</u>		<u>Keywords</u>	
		Reported, altitude	
<u>Description</u>			
The latest valid Mode C altitude received from an aircraft, or the latest reported altitude received from a pilot.			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
Airspace user		Host/ERAM	
<u>Contributors</u>	<u>Altering Events</u>		
Airspace user	Updated altitude reading received from aircraft		
<u>Audience</u>	<u>Data Usage</u>		
ANSP, airspace user	ATC to maintain aircraft separation		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of numeric characters	ddd (ICAO 4444 format)	Hundreds of Feet	000 through 999
<u>Example</u>			
040, 330			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automatic	Frequent
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ASDI Functional Description and Interface Control Document Version 5.4, ICAO 4444;			
<u>Data Transactions or Interfaces</u>			
CMS message (TH)			
<u>Notes</u>			

Reported Altitude			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.153 Requested Altitude

Requested Altitude			
Name		Taxonomy	
Requested Altitude		[TBD]	
Synonyms		Keywords	
Requested Cruising Level, altitude, cruising level, flight level		requested, altitude, cruising, level	
Description			
The requested altitude for a portion of a flight, or the entire flight			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		HOST/ERAM	
Contributors	Altering Events		
Airspace user	Amendment to flight plan		
Audience	Data Usage		
TFMS	Used by automation to create a trajectory for capacity planning.		
Data Type	Format	Units	Range
string of characters	(d)dd [altitude or flight level] OTP [VFR-on-top] OTP/(d)dd [VFR-on-top plus an altitude] (d)ddB(d)dd [A block of altitude or flight levels] ABV/(d)dd [Flight operating above specified altitude] VFR [VFR - received from an ARTS III facility] VFR/(d)dd [VFR plus an altitude - received from an ARTS III facility]	Altitude is expressed in hundreds of feet.	n/a
Example			
330, OTP/130			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated/manual	Once via plight plan, subsequently updated via flight plan amendment

Requested Altitude			
<u>Disposition</u>	<u>Mandatory</u>		
[TBD]	Yes		
<u>Requires</u>	<u>Is Required By</u>		
None	None		
<u>References</u>			
NAS-MD-311, ASDI, NAS-IC-24032410-14			
<u>Data Transactions or Interfaces</u>			
NAS-MD-311: Input to field 09 in HCS ASDI : NAS Flight Plan Information Message (FZ) NAS-IC-24032410-14: Flight Plan Information Message (FH), Flight Amendment Information Message (AH), RDB Flight Plan Information Message (FHI)			
<u>Notes</u>			
<p>1. NAS-MD-311: Each flight plan contains one altitude field, and the altitude is interpreted and stored as assigned altitude or as requested altitude, depending on the flight plan activity status:</p> <ul style="list-style-type: none">a. Assigned Altitude — when the activity status is activeb. Requested Altitude — when the activity status is proposed <p>In the flight plan, altitude is a part of the route, which also includes, speed, departure airport, departure time, arrival airport, and arrival time.</p> <p><u>ICAO Route (Field 915)</u> Requested Altitude (Requested Cruising Level). Element b. is 3-8 characters in one of the following formats:</p> <p>Lddd LdddBddd OTP OTP/(d)dd VFR</p> <p>where: “L” must be the letter F or A.</p> <p>2. In this case, the NAS flight plan, and the ICAO flight plan have differing formats. Flight Object should be able to handle both.</p> <p>3. When an altitude block is entered, the lower altitude is entered first</p>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.154 Reroute ID

Reroute ID				
Name		Taxonomy		
Reroute ID		[TBD]		
Synonyms		Keywords		
<none>		TFMDI		
Description				
System-generated reroute identifier for assigned routes. The same ID can be associated with more than one assigned route. A flight may be in more than one reroute and thus have more than one Reroute ID.				
Has Parts		Is Part Of		
Reroute name, creation timestamp		Any reroute		
Creator		Source		
TFMS		TFMS		
Contributors	Altering Events			
TFMS	Automatically generated by TFMS when a reroute is created.			
Audience	Data Usage			
TFMDI users (airlines etc.)	Uniquely identifies a reroute.			
Data Type	Format	Units	Range	
string	Usually <reroute name>.yyyymmddhhmmss	n/a	max 64 characters	
Example				
<ID>rr.vntscf.ux24.20021107095003</ID>				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
[TBD]		current	System-generated	Once
Disposition				Mandatory
Exists until reroute expires or is cancelled.				No
Requires		Is Required By		
ASSIGNED_ROUTE, ASSIGNED_RTE_TYPE		None		
References				
[TBD]				
Data Transactions or Interfaces				
TFMDI data exchanges.				

<u>Notes</u>			
n/a			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 6, 2010	Michael Harris (Volpe)	Initial version for review.

1.155 Route Source

Route Source	
<u>Name</u>	<u>Taxonomy</u>
Route Source	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
None	Route, source
<u>Description</u>	
Indicates the current source of the route being used to model the flight in TFMS. The Route Source can be "Historical", "Early Intent", "TOS", "Reroute", or "Flight Plan".	
This is not an existing element, but is a proposed new element that contains the reroute status currently shown, in part, using the ETD prefix.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
TFMS	TFMS
<u>Contributors</u>	<u>Altering Events</u>
TFMS	<p>TFMS would set Route Source when creating a flight, then update it as messages are processed.</p> <p>If TFMS uses an Early Intent message to update the flight modeling, it sets Route Source to "Early Intent".</p> <p>If TFMS uses a TOS message to update the flight modeling, it sets Route Source to "TOS".</p> <p>If TFMS uses a required reroute to update the flight modeling, it sets Route Source to "Reroute".</p> <p>If TFMS uses a Flight Plan message to update the flight modeling, it sets Route Source to "Flight Plan".</p>
<u>Audience</u>	<u>Data Usage</u>
Traffic managers Airspace users	Traffic managers and airspace users would use Route Source as a quick indication of how the flight is being modeled and why.

Route Source			
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
alphanumeric	One string from the controlled vocabulary: {“Historical”, “Early Intent”, “TOS”, “Reroute”, or “Flight Plan”}	n/a	n/a
<u>Example</u>			
Flight Plan			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
None	Future	Automated	Set when flight created, modified occasionally.
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
None			
<u>Data Transactions or Interfaces</u>			
None			
<u>Notes</u>			
This is a proposed new field to replace the ETD prefix.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.156 Sectors

Sectors			
Name		Taxonomy	
Sectors		[TBD]	
Synonyms		Keywords	
		Sectors, predicted, trajectory	
Description			
Current prediction of the sectors along the trajectory of a flight, where these predictions are based on all the information available to TFMS.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS generates an RT message for a flight under a variety of circumstances, with the most common being the receipt of an FS, FZ, or UZ message on that flight. (An FS message is an internal message that TFMS generates when a flight in the Official Airline Guide is loaded into the active TFMS databases; this typically happens twenty-four hours before the flight is scheduled to depart.)		
Audience	Data Usage		
TFMS, airspace user, ERAM	Metering, flow control, capacity management.		
Data Type	Format	Units	Range
Array of bytes (binary data)	6 bytes per array entry	n/a	n/a
Example			
[TBD]			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	automated	Occasional (see “Altering Events”)
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
None		None	
References			
Aircraft Situation Display To Industry: Functional Description and Interface Control Document (ver. 5.4)			

Sectors			
<u>Data Transactions or Interfaces</u>			
ASDI message (RT)			
<u>Notes</u>			
Should be renamed "Predicted sectors"			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.157 SEVEN_DELAY

SEVEN_DELAY			
Name		Taxonomy	
SEVEN_DELAY		[TBD]	
Synonyms		Keywords	
none		SEVEN, TFMS	
Description			
The SEVEN algorithm computes the delay for each Trajectory Option Set (TOS) option, adds it to the relative trajectory cost provided by the user, and selects the option with the lowest combined cost/delay as the assigned route. Seeing the SEVEN_DELAY will help the flight operator understand how their TOS affected the solution.			
Has Parts		Is Part Of	
n/a		TOS	
Creator		Source	
TFMS (SEVEN)		TFMS	
Contributors	Altering Events		
TFMS	The SEVEN delay is computed for each trajectory option for each flight in a SEVEN TMI each time the TMI is recomputed. The airspace user (flight operator) may submit updated TOSes based on substitutions made, or routes that are no longer viable. This may cause TFMS to compute new SEVEN delays.		
Audience	Data Usage		
TFMS Airspace user	Used by SEVEN to calculate lowest cost trajectory for a flight. Used by airspace user to understand why a particular trajectory option was assigned, and what delay they might get if they modify their TOS.		
Data Type	Format	Units	Range
integer	d+	minutes	0-1440
Example			
18, 120			
Access Restriction		Maturity	Accrual Method
		planned	automated
Disposition			Mandatory
			no
Requires		Is Required By	
TOS			

SEVEN_DELAY			
References			
Interface Control Document for SEVEN			
Data Transactions or Interfaces			
SEVEN messages			
Notes			
Version	Date	Author	Description of Changes
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.158 Slot Hold Flag

Slot Hold Flag	
<u>Name</u>	<u>Taxonomy</u>
Slot Hold Flag	[TBD]
<u>Synonyms</u>	<u>Keywords</u>
Slot hold flag, SH	Slot, hold, flag, cancelled, flight
<u>Description</u>	
A flag indicating whether a cancelled flight should be compressed to the end of a GDP or AFP the next time it is computed. Airspace users sometimes set the Slot Hold Flag to keep their open slots in their original positions, as they find it easier to determine their substitutions this way.	
<u>Has Parts</u>	<u>Is Part Of</u>
None	None
<u>Creator</u>	<u>Source</u>
Airspace user TFMS	TFMS
<u>Contributors</u>	<u>Altering Events</u>
TFMS NAS user Traffic manager	<p>The airspace user can set Slot Hold Flag when it cancels a flight using a CDM FX message.</p> <p>TFMS sets Slot Hold Flag to a default value (off) when cancelling a flight if value not provided by airspace user.</p> <p>TFMS automatically clears the Slot Hold Flag when it applies a new GDP or AFP to a flight.</p> <p>Airspace user can modify the value of Slot Hold Flag for an individual cancelled flight whenever it chooses using an FM message.</p> <p>Airspace user can set the values for all of its cancelled flights in a given GDP or AFP using the HOLD ALL SLOTS or RELEASE ALL SLOTS message.</p> <p>Traffic manager can modify the value of Slot Hold Flag for a flight using the EDCT Update function in TFMS.</p> <p>Traffic manager can set the values for all cancelled flights in a given GDP or AFP, or just those for a given NAS user, using the HOLD ALL SLOTS or RELEASE ALL SLOTS function in TFMS.</p>
<u>Audience</u>	<u>Data Usage</u>
TFMS Traffic manager Airspace users	<p>TFMS (FSM) does not compress a cancelled flight if the Slot Hold Flag is set when it computes a GDP or AFP.</p> <p>Traffic managers monitor the status of open slots to make sure that available capacity is not being wasted in a GDP or AFP.</p> <p>NAS users monitor the status of open slots as part of their slot management during a GDP or AFP.</p>

Slot Hold Flag			
Data Type	Format	Units	Range
Boolean	One of {TRUE, FALSE, null}	n/a	n/a
Example			
TRUE			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated or manual	Set initially whenever a flight is cancelled. Updated occasionally.
Disposition			Mandatory
Remains as long as the flight is cancelled and in the TFMS database.			No
Requires		Is Required By	
None		None	
References			
ICD for GDPs and AFPs, CDM Message Formats			
Data Transactions or Interfaces			
GDP/AFP messages, ADL files, CDM messages (FM and FX)			
Notes			
Can be defined only for cancelled flights.			
Version	Date	Author	Description of Changes
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.

1.159 Standard Arrival Route

Standard Arrival Route			
Name		Taxonomy	
Standard Arrival Route		[TBD]	
Synonyms		Keywords	
Arrival Route Name, Preferred Arrival Route, PAR, Standard Terminal Arrival Route (STAR)		ICAO Flight Plan, arrival, route, preferred, IFR, standard, STAR, PAR	
Description			
A published Instrument Flight Rules arrival procedure describing specific criteria for descent, routing, and communications for a specific runway at an airport.			
Has Parts		Is Part Of	
None		Filed Route (optional)	
Creator		Source	
ANSP		Host/ERAM	
Contributor s	Altering Events		
Airspace user, controller, TFMS	Used by airspace users in flight plans Used by TFMS to increase capacity and efficiency.		
Audience	Data Usage		
Airspace user, TFMS, controller	This data element is used in ATC activities, and for informing security and military organizations		
Data Type	Format	Units	Range
String of alphanumeric characters	5 alphanumeric character code for the route name	n/a	n/a
Example			
WLO1F			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once through the Flight Plan and subsequently updated through FPL amendments
Disposition			Mandatory
[TBD]			No

Standard Arrival Route			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
NAS-IC-24032410-14 (ETMS to HOST ICD)			
<u>Data Transactions or Interfaces</u>			
CMS messages (AH, HU, FH, FHI)			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.160 Standard Departure Route

Departure Route Name			
Name		Taxonomy	
Standard Departure Route		[TBD]	
Synonyms		Keywords	
Preferred Departure Route (PDR), Departure Route Name, Standard Instrument Departure (SID)		departure, route, preferred, IFR, standard, PDR	
Description			
Route established in a major terminal and en route environment to increase system efficiency and capacity. IFR clearances are issued based on these routes, listed in the Airport / Facility Directory except when severe weather avoidance procedures or other factors dictate otherwise.			
Has Parts		Is Part Of	
None		Filed Route (optional)	
Creator		Source	
ANSP		Host/ERAM	
Contributors	Altering Events		
ANSP	Updated infrequently by the ANSPs		
Audience	Data Usage		
Airspace user, Traffic manager, TFMS	Used by airspace users in flight plans Used by TFMS to increase capacity and efficiency.		
Data Type	Format	Units	Range
String of alphanumeric characters	5 alphanumeric character code for the route name	n/a	n/a
Example			
DEGES			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or automated	Once through the Flight Plan and subsequently updated through a FPL amendment
Disposition			Mandatory
[TBD]			No

Departure Route Name			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
NAS-IC-24032410-14 (ETMS to HOST ICD)			
<u>Data Transactions or Interfaces</u>			
CMS messages (AH, HU, FH, FHI)			
<u>Notes</u>			
None			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.161 Substitution Eligible

Substitution Eligible			
Name		Taxonomy	
Substitution Eligible		[TBD]	
Synonyms		Keywords	
SUB, SUB_EL		CDM, TFMS, ADL	
Description			
The SUB flag indicates whether any NAS user has substitution rights for this flight. Substitution is an action whereby an airline moves a flight from one assigned arrival slot into another arrival slot. A substitution may involve moving a flight into a cancelled flight’s slot, moving a flight into a previously vacated slot, or exchanging two flights’ arrival slots.			
Has Parts		Is Part Of	
n/a		n/a	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
FAA	Is set when flight created based on flight ID and adaptation data.		
Audience	Data Usage		
TFMS, airspace users	Used to determine how to handle a flight in Adaptive Compression. Used to determine how to handle a flight when a GDP or AFP is computed. Allows airspace users to know if substitutions are allowed for this flight.		
Data Type	Format	Units	Range
alpha	L (one letter)	n/a	N or Y
Example			
Y			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	current	automated	Once
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		n/a	
References			
ADL Description			

Substitution Eligible			
<u>Data Transactions or Interfaces</u>			
ADL Reports			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.162 Surveillance Equipment

Surveillance Equipment			
Name		Taxonomy	
Surveillance Equipment		[TBD]	
Synonyms		Keywords	
None		ICAO Flight Plan, surveillance, equipment, flight plan, FPL	
Description			
1 or 2 letters to describe the serviceable surveillance equipment carried by the aircraft			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace User		[Host/ERAM?]	
Contributor s	Altering Events		
None	This data element is set through the initial Flight Plan and can potentially be modified through a FPL amendment		
Audience	Data Usage		
ANSP, [search and rescue?]	Used to determine what kind of surveillance information the aircraft is capable of providing		
Data Type	Format	Units	Range
String of alphanumeric characters	L(L) from the following controlled dictionary: N – Nil A – Transponder Mode A C – Transponder Mode A, and Mode C X – Transponder – Mode S, without both aircraft identification and pressure-altitude transmission P – Transponder – Mode S, including pressure altitude transmission, but no aircraft identification transmission I – Transponder – Mode S, including aircraft identification transmission, but no pressure-altitude transmission S – Transponder – Mode S, including both pressure altitude, and aircraft identification transmission	n/a	n/a
Example			
S/A, SCHJ/CD, SAFJ/SD			

Surveillance Equipment			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automatic or manual	Once, with possible amendments
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICD NAS-IC-24032410-14, , Annex 3 to the Convention of International Civil Aviation, International Standards — Rules of the Air			
<u>Data Transactions or Interfaces</u>			
Message Sets: JCAB, ICAO FPL			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.

1.163 Survival Equipment

Survival Equipment			
Name		Taxonomy	
Survival Equipment		[TBD]	
Synonyms		Keywords	
None		ICAO Flight Plan, FPL, emergency, equipment, survival, gear	
Description			
Indicates that the aircraft is equipped with emergency survival equipment for harsh environments (polar, desert, maritime, or jungle)			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace User		flight planning service	
Contributor s	Altering Events		
Airspace User	Value set by initial Flight Plan and potentially modified through a flight plan amendment if any changes prior to departure, or during flight		
Audience	Data Usage		
Search and rescue, [TFMS?]	Used by search and rescue during emergency situations.		
Data Type	Format	Units	Range
String of characters	One of the following values: P (for Polar), D (for Desert), M (for Maritime), J (for Jungle)	N/A	N/A
Example			
P M J			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once, with possible amendments
Disposition			Mandat ory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air.			

Survival Equipment			
<u>Data Transactions or Interfaces</u>			
Information captured when flight plan filed, or amended. Information is read when transferred to search and rescue			
<u>Notes</u>			
This information is part of the supplementary flight plan data and shall be kept readily available by the operator at the departure aerodrome or another agreed location, so that, on request by ATS units, it can be supplied without delay. When transmitted by the AFTN (aeronautical fixed telecommunications network), the message shall be assigned the same priority indicator as that in the request message. Supplementary information is stored with flight planning service [wherever the flight plan is entered...e.g. FSS, DUATS, AOC, etc.]". HOST/ERAM only uses the the route information (i.e. fields 1-11 for NAS FPs, and fields 3-18 for ICAO FPs).			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 25, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Changed "Source" from "HOST/ERAM" to "flight planning service" Added notes.

1.164 TFM Unique Flight ID (TUFI)

TFM Unique Flight ID (TUFI)			
<u>Name</u>		<u>Taxonomy</u>	
TUFI		[TBD]	
<u>Synonyms</u>		<u>Keywords</u>	
None		Flight, identification, ID	
<u>Description</u>			
Identifier which uniquely defines a flight in TFM			
<u>Has Parts</u>		<u>Is Part Of</u>	
None		None	
<u>Creator</u>		<u>Source</u>	
TFMS		TFMS	
<u>Contributors</u>	<u>Altering Events</u>		
None	The value of the TUFI is set by TFMS and is not modified throughout the life of the flight		
<u>Audience</u>	<u>Data Usage</u>		
TFMS and all other systems which interact with TFMS	This data element identifies the flight in all TFMS data interchanges which refer to a specific flight		
<u>Data Type</u>	<u>Format</u>	<u>Units</u>	<u>Range</u>
String of characters	[Unknown]	n/a	n/a
<u>Example</u>			
KW00005157			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Generated by TFMS	Once
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			Yes
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
TFMS documentation			
<u>Data Transactions or Interfaces</u>			
Used in all transactions which involve, or pertain to a certain flight			

TFM Unique Flight ID (TUFI)			
<u>Notes</u>			
This data element will be replaced by a flight identifier which is unique across all systems			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 26, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

1.165 Total Estimated Elapsed Time

Total Estimated Elapsed Time			
Name		Taxonomy	
Total Estimated Elapsed Time		[TBD]	
Synonyms		Keywords	
Total EET		EET, time, elapsed	
Description			
The Total Estimated Elapsed Time is the estimated time enroute, along with the time of any stopovers, expressed as a four digit grouping including hours and minutes. For IFR flights, a flight plan cannot include stopovers. A new flight plan must be filed for each leg. An IFR Flight Itinerary may include stopovers.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host /ERAM	
Contributors	Altering Events		
Airspace user	Flight plan amendment		
Audience	Data Usage		
ERAM, TFMS	Provides an estimate for understanding the duration of the Flight		
Data Type	Format	Units	Range
String of characters	HH:MM	n/a	n/a
Example			
23:59			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Automated or manual	Once thru the FPL and subsequently update through FPL and amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
ICAO 4444			
Data Transactions or Interfaces			
FPL			

Total Estimated Elapsed Time			
Notes			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.166 TMI_ID

TMI_ID			
Name		Taxonomy	
TMI_ID		[TBD]	
Synonyms		Keywords	
none		XFS, TFMS, ERAM, TSD	
Description			
A traffic management initiative (TMI) identifier that indicates what reroute this flight is part of.			
Has Parts		Is Part Of	
n/a		n/a	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS (TSD) Traffic manager	TFMS assigns the TMI_ID from the reroute definition to a flight that is being amended for that reroute. If a flight is in more than one reroute, TFMS will assign the TMI_ID from the reroute from which the assigned route was selected by the traffic manager.		
Audience	Data Usage		
ERAM Traffic manager	ERAM displays the TMI_ID to the en-route controller. Traffic manager uses the TMI ID to know what reroute a flight's route was amended for.		
Data Type	Format	Units	Range
string	The current thinking is that the TMI ID will be constructed as follows: "RR<3 character facility ID of the facility where the reroute was created><advisory number if an advisory was issued for this reroute, otherwise a unique 3-digit sequence number>". The 3-digit sequence number needs to be unique only relative to the issuing facility for the course of an air traffic day. For example, RRZFW001 and RRZDV001 could be in use at the same time on one day, and could be in use again the next day.	n/a	n/a
Example			
RRZFW001			

TMI_ID			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
	planned	automated	occasional
<u>Disposition</u>			<u>Mandatory</u>
			no
<u>Requires</u>		<u>Is Required By</u>	
none		n/a	
<u>References</u>			
Systems Requirements Document: Execution of Flow Strategies			
<u>Data Transactions or Interfaces</u>			
TFM Reroute and TFM Reroute Cancel messages from TFMS to ERAM. Responses from ERAM to TFMS.			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.167 TMI_NAME

TMI_NAME			
Name		Taxonomy	
TMI_NAME		[TBD]	
Synonyms		Keywords	
TMI Name, SEVEN TMI Name		SEVEN	
Description			
Text name for a SEVEN TMI, e.g., the name of the TMI that provides a trajectory assignment.			
Has Parts		Is Part Of	
none		none	
Creator		Source	
Traffic Manager		TFMS	
Contributors	Altering Events		
Traffic Manager	Assigned by a Traffic Manager when he/she creates a TMI.		
Audience	Data Usage		
All SEVEN TMI FAA & NAS users	Identifies SEVEN TMIs by name in all SEVEN TMI messages: trajectory assignment, drop-out message, list reply, re-synch request, delete message, substitution message, substitution reply, substitution error.		
Data Type	Format	Units	Range
string	(in SEVEN TMI messages) tagged XML data element	n/a	1-30 characters
Example			
<TMI_NAME>FCA123</TMI_NAME>			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	planned	Assigned	once only
Disposition			Mandatory
Disposed of at some point after the SEVEN TMI expires or is cancelled.			No
Requires		Is Required By	
A SEVEN TMI		Any reference to a SEVEN TMI	
References			
SEVEN documents			
Data Transactions or Interfaces			
SEVEN TMI messages.			

<u>Notes</u>			
<u>Versio n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jul 15, 2010	Michael Harris (Volpe)	Initial version for review.

1.168 TOS Sequence Number

TOS Sequence Number				
Name		Taxonomy		
TOS Sequence Number		[TBD]		
Synonyms		Keywords		
TOS_SEQ_NO		SEVEN, TFMS		
Description				
Sequence number assigned to the Trajectory Option Set (TOS) by the Flight Operator System (FOS). It is used for synchronizing TOS data.				
Has Parts		Is Part Of		
n/a		TOS		
Creator		Source		
airspace user		Flight Operator System (FOS)		
Contributor s	Altering Events			
airspace user	Set when TOS is generated.			
Audience	Data Usage			
airspace user, TFMS	Used for keeping message data synchronized between the FOS and TFMS.			
Data Type	Format	Units	Range	
integer	d+	n/a	n/a	
Example				
1, 4				
Access Restriction		Maturity	Accrual Method	Accrual Periodicity
		planned	automated	once
Disposition				Mandat ory
				no
Requires		Is Required By		
n/a		TOS		
References				
Interface Control Document for SEVEN				

<u>Data Transactions or Interfaces</u>			
SEVEN messages			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.169 Trajectory Index

Trajectory Index			
Name		Taxonomy	
Trajectory Index		[TBD]	
Synonyms		Keywords	
TRAJ_INDEX		SEVEN, TFMS	
Description			
The trajectory index (TRAJ_INDEX) helps the FOS associate the trajectory assignment with the TOS option when a SEVEN TMI is issued. If no TOS has been submitted for this flight, TRAJ_INDEX will be omitted.			
Has Parts		Is Part Of	
n/a		Trajectory option	
Creator		Source	
airspace user		Flight Operator System (FOS)	
Contributors	Altering Events		
airspace user	Set for each trajectory option whenever a TOS is generated.		
Audience	Data Usage		
TFMS (SEVEN), airspace user	Used by TFMs and the airspace user for synchronization of data.		
Data Type	Format	Units	Range
integer	d+	n/a	1 - number of flights
Example			
20			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	planned	automated	occasional
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		Trajectory option	
References			
Interface Control Document for SEVEN			

Trajectory Index			
<u>Data Transactions or Interfaces</u>			
SEVEN messages			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.170 Trajectory Minimum Notification Time

Trajectory Minimum Notification Time			
Name		Taxonomy	
Trajectory Minimum Notification Time		[TBD]	
Synonyms		Keywords	
TRAJ_MIN_NOTIF_TIME		SEVEN, TFMS	
Description			
The minimum amount of notice needed prior to departure time for the flight to switch to this trajectory.			
Has Parts		Is Part Of	
n/a		Trajectory option	
Creator		Source	
airspace user		TFMS	
Contributors	Altering Events		
airspace user	Optionally set for each trajectory option whenever a TOS is generated.		
Audience	Data Usage		
TFMS (SEVEN)	Used by SEVEN to make decisions about flight slots and trajectories.		
Data Type	Format	Units	Range
integer	d+	minutes	
Example			
20			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	planned	Automated	occasional
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		n/a	
References			
Interface Control Document for SEVEN			
Data Transactions or Interfaces			
SEVEN messages			
Notes			

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.171 Trajectory Option

Trajectory Option			
Name		Taxonomy	
Trajectory Option		[TBD]	
Synonyms		Keywords	
TRAJ_OPTION, route option		Trajectory, option, set, TRAJ_OPTION, route, altitude, speed, TOS, preference, constraint, SEVEN	
Description			
A Trajectory Option defines a route, altitude, and speed that an airspace user is willing to fly. It is provided to TFMS as part of a TOS. It includes user preferences and user constraints on how the route, altitude, and speed should be used. See Trajectory Option Set for more discussion.			
Has Parts		Is Part Of	
Trajectory_Index, Relative_Trajectory_Cost, Trajectory_Minimum_Notification_Time, Trajectory_Valid_Start, Trajectory_Valid_End, Route, Altitude, Speed.		Trajectory option set	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Airspace user creates one or more Trajectory Options for a flight whenever it wants by sending TOS message to TFMS. Airspace user can modify a Trajectory Option for a flight whenever it wants by sending a new TOS message to TFMS.		
Audience	Data Usage		
TFMS	TFMS uses Trajectory Options for flights involved in a SEVEN TMI, to determine a set of route and delay assignments that resolve an airspace constraint while accommodating NAS user preferences.		
Data Type	Format	Units	Range
complex	See SEVEN ICD	n/a	n/a
Example			
See SEVEN ICD			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Planned	Automated.	Occasional.
Disposition			Mandatory
Once a Trajectory Option is accepted by TFMS for a flight, the Trajectory Option exists until it is replace by a new TOS or the flight is disposed of.			No

Trajectory Option			
<u>Requires</u>		<u>N</u>	
None		None	
<u>References</u>			
SEVEN ICD			
<u>Data Transactions or Interfaces</u>			
SEVEN messages			
<u>Notes</u>			
Planned for TFMS Release 7.			
<u>Version</u> <u>n</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen Hamilton)	For consistency, changed Data Type from “compound” to “complex”

1.172 Trajectory Option Set

Trajectory Option Set			
Name		Taxonomy	
Trajectory Option Set		[TBD]	
Synonyms		Keywords	
TOS, route options.		Trajectory, option, set, TOS, route, constraint, altitude, speed, preference, SEVEN	
Description			
A set of trajectory (route, altitude, speed) options provided by the NAS user to TFMS for use in airspace constraint resolution. Includes user preferences and user constraints on how the options should be used. The TOS allows an airspace user to provide a range of pre-approved options that TFMS can use if and when airspace becomes constrained. The SEVEN algorithms consider all the flights in the constrained airspace and their TOSes to compute a set of delay and trajectory assignments that resolve the constraint. Since the trajectories are pre-approved and prioritized by the users, the solution should, to some degree, minimize the impact of the solution of the airspace users involved.			
Has Parts		Is Part Of	
ACID, Origin, Destination, IGTD, TOS_Seq_No, Type, ERTD, Rel_Flt_Priority, Trajectory_Options		None	
Creator		Source	
Airspace user		TFMS	
Contributors	Altering Events		
Airspace user	Airspace user creates a TOS for a flight whenever it wants by sending TOS message to TFMS. Airspace user can modify a TOS for a flight whenever it wants by sending a new TOS message to TFMS.		
Audience	Data Usage		
TFMS	TFMS uses TOSes for flights involved in a SEVEN TMI, to determine a set of route and delay assignments that resolve an airspace constraint while accommodating airspace user preferences.		
Data Type	Format	Units	Range
complex	n/a	n/a	n/a
Example			
See SEVEN ICD			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Planned	Automated	Occasional

Trajectory Option Set			
<u>Disposition</u>			<u>Mandatory</u>
Once a TOS is accepted by TFMS for a flight, the TOS exists until it is replace by a new TOS or the flight is disposed of.			No
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
SEVEN ICD			
<u>Data Transactions or Interfaces</u>			
TOS messages between NAS users and TFMS.			
<u>Notes</u>			
Planned for TFMS Release 7			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jun 15, 2010	Ken Howard (Volpe)	Initial version for review.
1.1	Oct 5, 2010	Cristian Ianculescu (Booz Allen Hamilton)	For consistency, changed Data Type from “compound” to “complex”

1.173 Trajectory Valid End Time

Trajectory Valid End Time			
Name		Taxonomy	
Trajectory Valid End Time		[TBD]	
Synonyms		Keywords	
TRAJ_VALID_END		SEVEN, TFMS	
Description			
The latest departure time for which this trajectory can be used by this flight.			
Has Parts		Is Part Of	
n/a		Trajectory option	
Creator		Source	
airspace user		Flight Operator System (FOS)	
Contributors	Altering Events		
airspace user	Optionally set for each trajectory option whenever a TOS is generated.		
Audience	Data Usage		
TFMS (SEVEN)	Used by SEVEN to make decisions about flight slots and trajectories.		
Data Type	Format	Units	Range
date/time	yyyymmddhhmmss	n/a	valid date and time
Example			
20101229155100			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	planned	automated	occasional
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		n/a	
References			
Interface Control Document for SEVEN			
Data Transactions or Interfaces			
SEVEN messages			
Notes			

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.174 Trajectory Valid Start Time

Trajectory Valid Start Time			
Name		Taxonomy	
Trajectory Valid Start Time		[TBD]	
Synonyms		Keywords	
TRAJ_VALID_START		SEVEN, TFMS	
Description			
The earliest departure time for which this trajectory can be used by this flight.			
Has Parts		Is Part Of	
n/a		Trajectory option	
Creator		Source	
airspace user		Flight Operator System (FOS)	
Contributors	Altering Events		
airspace user	Optionally set for each trajectory option whenever a TOS is generated.		
Audience	Data Usage		
TFMS (SEVEN)	Used by SEVEN to make decisions about flight slots and trajectories.		
Data Type	Format	Units	Range
date/time	yyyymmddhhmmss	n/a	valid date and time
Example			
20101229155100			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
	planned	automated	occasional
Disposition			Mandatory
			no
Requires		Is Required By	
n/a		n/a	
References			
Interface Control Document for SEVEN			
Data Transactions or Interfaces			
SEVEN messages			
Notes			

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Aug 10, 2010	Claire Morton (Volpe)	Creation.

1.175 Type of Flight

Type of Flight			
Name		Taxonomy	
Type of Flight		[TBD]	
Synonyms		Keywords	
		Type, flight, FPL, field 8	
Description			
Denotes the type of flight when so required by the appropriate Air Traffic Service authority			
Has Parts		Is Part Of	
None		None	
Creator		Source	
Airspace user		Host / ERAM	
Contributors	Altering Events		
Airspace user, Controller	Flight plan amendment, controller modification		
Audience	Data Usage		
ATC, TFM, ERAM	Identifies the general category of flight		
Data Type	Format	Units	Range
single character	S=scheduled air service N=non-scheduled air transport operation G=general aviation M= military X= any other	n/a	n/a
Example			
S			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
[TBD]	Current	Manual or automated	Once thru the FPL and subsequently update through FPL and amendment
Disposition			Mandatory
[TBD]			Yes
Requires		Is Required By	
None		None	
References			
ICAO 4444, NAS-IC-24032410-14 (ETMS to HOST ICD)			

Type of Flight			
<u>Data Transactions or Interfaces</u>			
CMS messages (AH, HU, FH, HI, HJ, FHI)			
<u>Notes</u>			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Tim Reynolds (Booz Allen Hamilton)	Initial version for review.

1.176 User Category

User Category			
Name		Taxonomy	
User Category		[TBD]	
Synonyms		Keywords	
USR		Flight Data Fields	
Description			
The category of user operating the flight: Air Carrier, Freight/Cargo Carrier, General Aviation, Military, Air Taxi, Other			
Has Parts		Is Part Of	
none		none	
Creator		Source	
TFMS		TFMS (ADL)	
Contributors	Altering Events		
TFMS	Extracted from incoming flight data messages.		
Audience	Data Usage		
GDP and AFP Rationing, Compression , Ground Stops FSM SEVEN TFMS	Specific user categories can be exempted from an GDP or AFP. Specific user categories can be prioritized during compression. Specific user categories can be exempted or included in a Ground Stop. FSM can report flight counts by user category, and can select flights by user category for inclusion in slot lists etc. User category can be used for filtering flight displays, making list requests, and specifying filters for FEAs/FCAs.		
Data Type	Format	Units	Range
Character	One character	n/a	C - Air Carrier F - Freight/Cargo Carrier G - General Aviation M - Military T - Air Taxi O - Other
Example			
C, G			
Access Restriction		Maturity	Accrual Method
[TBD]		current	automated
		Accrual Periodicity	rarely

User Category			
<u>Disposition</u>			<u>Mandatory</u>
Exists until the flight is disposed of.			Yes
<u>Requires</u>		<u>Is Required By</u>	
none		none	
<u>References</u>			
ADL doc, TFMS doc, FSM doc			
<u>Data Transactions or Interfaces</u>			
ADL			
<u>Notes</u>			
n/a			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Jul 19, 2010	Michael Harris (Volpe)	Initial version for review.

1.1 Wake Turbulence Category

Wake Turbulence Category			
Name		Taxonomy	
Wake Turbulence Category		[TBD]	
Synonyms		Keywords	
		ICAO Flight Plan, FPL, wake, turbulence, separation, 2 minute, 3 minute	
Description			
Characterization of the wake turbulence produced by an aircraft. ICAO defines three categories, as follows: J - SUPER, Airbus A380 H - HEAVY, to indicate an aircraft type with a maximum take-off mass (MOTM) of 136,000 kg or more; M - MEDIUM, to indicate an aircraft type with a MOTM of less than 136,000 kg but more than 7000; L - LIGHT, to indicate an aircraft type with a MOTM of 7,000 kg or less The FAA use the following categorization: SUPER - A separate designation that currently only refers to the Airbus A380 HEAVY - Aircraft capable of takeoff weights of more than 255,000 pounds (116,000 kg) whether or not they are operating at this weight during a particular phase of flight. LARGE - Aircraft of more than 41,000 pounds (19,000 kg), maximum certificated takeoff weight, up to 255,000 pounds. SMALL - Aircraft of 41,000 pounds or less maximum certificated takeoff weight.			
Has Parts		Is Part Of	
None		Aircraft Data	
Creator		Source	
Airspace user		[ERAM?]	
Contributors	Altering Events		
None	Value set through initial Flight Plan and subsequently modified by potential Flight Plan amendments		
Audience	Data Usage		
ANSP	Used by ANSP to determine aircraft separation during all phases of flight		
Data Type	Format	Units	Range
Alphanumeric character	One of the following values: { 'H', 'M', 'L' }	n/a	n/a
Example			
M			

Wake Turbulence Category			
<u>Access Restriction</u>	<u>Maturity</u>	<u>Accrual Method</u>	<u>Accrual Periodicity</u>
[TBD]	Current	Automatic or manual	Once, with possible rare amendments
<u>Disposition</u>			<u>Mandatory</u>
[TBD]			
<u>Requires</u>		<u>Is Required By</u>	
None		None	
<u>References</u>			
ICD NAS-IC-24032410-14, Annex 2 to the Convention of International Civil Aviation, International Standards — Rules of the Air			
<u>Data Transactions or Interfaces</u>			
Message Sets: CMS, ICAO FPL, JCAB			
<u>Notes</u>			
The wake turbulence category is used to ensure appropriate separation between aircraft. The picture below shows wingtip turbulence, the most dangerous component of wake turbulence.			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	May 27, 2010	Rod Little (Booz Allen Hamilton)	Initial version for review.
1.1	Oct 6, 2010	Rod Little (Booz Allen Hamilton)	Removed picture of wing tip turbulence Added “J – SUPER, Airbus A380” to the description.

1.2 Waypoints

Waypoints			
Name		Taxonomy	
Waypoints		[TBD]	
Synonyms		Keywords	
		Waypoints, predicted, trajectory	
Description			
Current prediction of the waypoints of the trajectory for a flight, where these predictions are based on all the information available to TFMS.			
Has Parts		Is Part Of	
None		None	
Creator		Source	
TFMS		TFMS	
Contributors	Altering Events		
TFMS	TFMS generates an RT message for a flight under a variety of circumstances, with the most common being the receipt of an FS, FZ, or UZ message on that flight. (An FS message is an internal message that TFMS generates when a flight in the Official Airline Guide is loaded into the active TFMS databases; this typically happens twenty-four hours before the flight is scheduled to depart.)		
Audience	Data Usage		
TFMS, airspace users, ERAM	Metering, flow control, capacity management.		
Data Type	Format	Units	Range
Array of bytes (binary data)	Array of 2*3 bytes (6 bytes per array entry)	n/a	n/a
Example			
[TBD]			
Access Restriction	Maturity	Accrual Method	Accrual Periodicity
None	Current	Automated	Occasional (see “Altering Events”)
Disposition			Mandatory
[TBD]			no
Requires		Is Required By	
None		None	
References			
Aircraft Situation Display To Industry: Functional Description and Interface Control Document (ver. 5.4)			

Waypoints			
<u>Data Transactions or Interfaces</u>			
ASDI message (RT)			
<u>Notes</u>			
Should be renamed "Predicted Waypoints"			
<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description of Changes</u>
1.0	Sept 15, 2010	Cristian Ianculescu (Booz Allen Hamilton)	Initial version for review.

Appendix A - Submission History

The Flight Object Data Dictionary is developed in an iterative manner. This appendix presents a high-level revision history for each data element. The markup in the table has the following meaning:

- "A" = Added
- "U" = Updated
- "D" = Deleted
- "-" = no change

	DATA ELEMENT	DATA DICTIONARY VERSION #			
		1.5	1.7		
1.	Accepted By		A		
2.	Actual Departure Time		A		
3.	Actual Gate Time of Arrival (AGTA)	A	U		
4.	Actual Gate Time of Departure (AGTD)	A	-		
5.	Actual Time of Arrival		A		
6.	Addressee	A	D		
7.	Airborne Equipment Qualifier	A	U		
8.	Aircraft Category		A		
9.	Aircraft Color and Markings	A	U		
10.	Aircraft Data	A	U		
11.	Aircraft Identification	A	-		
12.	Aircraft Position		A		
13.	Aircraft Type	A	-		
14.	Airline Gate Time of Arrival (LGTA)	A	-		
15.	Airline Gate Time of Departure (LGTD)	A	-		
16.	Airline Runway Time of Arrival (LRTA)	A	-		
17.	Airline Runway Time of Departure (LRTD)	A	U		
18.	Airways		A		
19.	Alternate Airports		A		
20.	Alternate Beacon Code	A	-		
21.	Arrival Fix		A		
22.	Arrival Slot	A	-		
23.	Assigned		A		
24.	Assigned Altitude		A		
25.	ASSIGNED RTE		A		
26.	ASSIGNED RTE TYPE		A		
27.	Baseline Entry (BENTRY)	A	-		
28.	Baseline Estimated Time of Arrival (BETA)	A	-		
29.	Baseline Estimated Time of Departure (BETD)	A	-		
30.	Beacon Code	A	-		
31.	Boundary Crossing Point Inbound	A	-		
32.	Calculated Inbound Boundary Crossing Time	A	-		
33.	Calculated Speed		A		
34.	Cancel Reason		A		
35.	CDM Member		A		
36.	Centers		A		

	DATA ELEMENT	DATA DICTIONARY VERSION #			
		1.5	1.7		
37.	Coast Indicator		A		
38.	Control Element	A	-		
39.	Control Exempt	A	-		
40.	Control Type	A	-		
41.	Controlled Time of Arrival (CTA)	A	-		
42.	Controlled Time of Departure (CTD)	A	-		
43.	Controlling Facility	A	-		
44.	Controlling Sector	A	-		
45.	Coordination Fix	A	-		
46.	Coordination Time	A	U		
47.	Delay	A	-		
48.	Delay Reason		A		
49.	Departure Airport	A	U		
50.	Departure Fix		A		
51.	Destination Airport		A		
52.	Dinghies	A	U		
53.	Diversion Recovery	A	-		
54.	Drop Out		A		
55.	Earliest Entry (EENTRY)	A	-		
56.	Earliest Runway Time of Arrival (ERTA)	A	-		
57.	Earliest Runway Time of Departure (ERTD)	A	-		
58.	Emergency Radio Equipment	A	U		
59.	Endurance	A	U		
60.	ENTRY	A	-		
61.	Estimated Arrival Fix Time		A		
62.	Estimated Departure Fix Time		A		
63.	Estimated Hold Departure Time		A		
64.	Estimated Time Enroute (ETE)	A	-		
65.	Estimated Time of Arrival (ETA)	A	-		
66.	Estimated Time of Departure (ETD)	A	-		
67.	EXIT	A	-		
68.	FCA_ID		A		
69.	FDB Free Form Text	A	-		
70.	FDB Heading		A		
71.	FDB Speed		A		
72.	Filed Route		A		
73.	Filed Speed		A		
74.	Filing Time	A	-		
75.	Fixes		A		
76.	Flight Identification	A	-		
77.	Flight Index		A		
78.	Flight Plan Accepted By	A	-		
79.	Flight Plan Addressee		A		
80.	Flight Plan Filed By	A	-		
81.	Flight Plan Originator	A	-		
82.	Flight Rules	A	-		
83.	Flight Status	A	-		
84.	Global Unique Flight Identifier (GUFI)	A	U		
85.	Great Circle Distance		A		

	DATA ELEMENT	DATA DICTIONARY VERSION #			
		1.5	1.7		
86.	Ground Speed		A		
87.	Hold Fix	A	-		
88.	ICAO EET Indicator	A	U		
89.	In Delay Program	A	-		
90.	Initial Entry (IENTRY)	A	-		
91.	Initial Gate Time of Arrival (IGTA)	A	-		
92.	Initial Gate Time of Departure (IGTD)	A	-		
93.	Interim Altitude		A		
94.	Life Jackets	A	-		
95.	MAJOR		A		
96.	Number of Aircraft	A	U		
97.	Off-block Time		A		
98.	Original Departure Airport		A		
99.	Original Destination		A		
100.	Original Flight Identification	A	-		
101.	Original ODDT	A	-		
102.	Persons on Board	A	-		
103.	Pilot in Command	A	-		
104.	Planned Position		A		
105.	Progress Report Fix		A		
106.	Progress Report Time		A		
107.	Proposed Departure Time		A		
108.	Protected Area		A		
109.	Receiving Facility	A	U		
110.	Receiving Sector	A	-		
111.	Relative Flight Priority		A		
112.	Relative Trajectory Cost		A		
113.	Remarks		A		
114.	Reported Altitude		A		
115.	Requested Altitude		A		
116.	Reroute ID		A		
117.	Route Source	A	-		
118.	Sectors		A		
119.	SEVEN_DELAY		A		
120.	Slot Hold Flag		A		
121.	Standard Arrival Route		A		
122.	Standard Departure Route		A		
123.	Substitution Eligible		A		
124.	Surveillance Equipment	A	-		
125.	Survival Equipment	A	-		
126.	TFM Unique Flight ID (TUFI)	A	-		
127.	Total Estimated Elapsed Time		A		
128.	TMI_ID		A		
129.	TMI_NAME		A		
130.	TOS Sequence Number		A		
131.	Trajectory Index		A		
132.	Trajectory Minimum Notification Time		A		
133.	Trajectory Option	A	U		
134.	Trajectory Option Set	A	U		

	DATA ELEMENT	DATA DICTIONARY VERSION #			
		1.5	1.7		
135.	Trajectory Valid End Time		A		
136.	Trajectory Valid Start Time		A		
137.	Type of Flight		A		
138.	User Category		A		
139.	Wake Turbulence Category	A	U		
140.	Waypoints		A		

Appendix B - Reference Table

The flight data captured in this Data Dictionary hails from a wide variety of system data exchanges. Many of these interfaces were designed in isolation, with limited or no regard to already existing interfaces. This resulted in data elements with the same meaning being referred to by different names (synonyms) in different interfaces, and in some cases, elements with the same name having more than one meaning (homonyms) depending on the interface. The reference table below provides the ability to identify linkages between the flight data exchanged via flight data interfaces as described by Interface Control Documents (ICDs). This is important to finding redundant data elements and keeping the Data Dictionary manageable.

The reference table is an array of data elements and the ICDs which contain them. The table only shows data elements from the Data Dictionary.

To read the table, find the data element name in which you are interested (the data elements are listed in alphabetical order). Follow the corresponding line. If the data element appears in an ICD, the corresponding column is marked with an "X". If the ICD contains a synonym of the data element, the name of the synonym is presented in the corresponding cell.

#	Data Element Name	Version	ICD									
			CDM	ADL	GDP/AFP	TFMDI	CTOP (SEVEN)	XFS	ASDI	ICAO FP	JCAB	CMS
1	Accepted By	1.6								X		
2	Actual Departure Time	1.6	ARTD	OFF					X		ATD	
3	Actual Gate Time of Arrival (AGTA)	1.5	X	IN								
4	Actual Gate Time of Departure (AGTD)	1.5	X	OUT								
5	Actual Runway Time of Arrival (ARTA)	1.5	X	ON								
6	Actual Runway Time of Departure (ARTD)	1.5	X	OFF					Actual Departure Time		ATD	
7	Actual Time of	1.6	ARTA	ON					Arrival		X	Arrival

#	Data Element Name	Version	ICD									
			CDM	ADL	GDP/AFP	TFMDI	CTOP (SEVEN)	XFS	ASDI	ICAO FP	JCAB	CMS
	Code											
23	Arrival Airport (ARR)	1.6	X	DEST	X	DEST	DEST		X	DEST	DEST	DEST
24	Arrival Fix (AFIX)	1.5		X								
25	Arrival Route Name	1.6		STAR								X
26	Arrival Slot (ASLOT)	1.5	Assigned Arrival Slot	X	X		SLOT					
27	ASSIGNED	1.5					X					
28	Assigned Altitude	1.6							X			X
29	Assigned Arrival Slot	1.5	X	ASLOT			SLOT					
30	Assigned Route (ASSIGNED_RTE)	1.5				X						
31	Assigned Route Type (ASSIGNED_RTE_TYPE)	1.5				X						
32	Baseline Entry (BENTRY)	1.5		X								
33	Baseline ETA (BETA)	1.5		X								
34	Baseline ETD (BETD)	1.5		X								
35	Beacon Code	1.5							X			X
36	Boundary Crossing Point Inbound	1.5							X			
37	Calculated Inbound Boundary Crossing Time	1.5							X			
38	Calculated Speed	1.6							X			
39	Cancel Reason (UX, FX, RZ, RS, TO, DV, RM)	1.5		X								
40	CDM Member (CDM_MBR)	1.5		X								

[illegible]

#	Data Element Name	Version	ICD									
			CDM	ADL	GDP/AFP	TFMDI	CTOP (SEVEN)	XFS	ASDI	ICAO FP	JCAB	CMS
76	Estimated Time Enroute (ETE)	1.5										X
77	Estimated Time of Arrival (ETA)	1.5		X		X			X		X	X
78	Estimated Time of Departure (ETD)	1.5		X		X					X	Departure Time
79	Exempt Flag (EX)	1.5		Control Exempt (CTL_EXM PT)	X							
80	EXIT	1.5		X								
81	FCA_EARLIEST_ENTRY	1.5		EENTRY	EENTRY		X					
82	FCA_ID	1.5					X					
83	FDB Free Form Text	1.6										X
84	FDB Heading	1.6										X
85	FDB Speed	1.6										X
86	Filed By	1.5								X		
87	Filed Coordination Time	1.5							Coordination Time			X
88	Filing Time	1.5								X		
89	Fixes	1.6							X			
90	Flight Identification (Flight ID)	1.5	X	ACID	X	ACID	ACID		ACID, Flight Index	ACID	ACID	X
91	Flight index	1.6	Flight ID	ACID	Flight ID	ACID	ACID		X, ACID	ACID	ACID	Flight ID
92	Flight Rules	1.5								X	X	X
93	Flight Status	1.5		X	Cancel Flag (CX)							
94	Global Unique Flight Identifier (GUFI)	1.5						X				

[illegible]

#	Data Element Name	Version	ICD									
			CDM	ADL	GDP/AFP	TFMDI	CTOP (SEVEN)	XFS	ASDI	ICAO FP	JCAB	CMS
3												
114	OUT	1.5	AGTD	X								
115	Persons On Board	1.5								X		
116	Pilot In Command (PIC)	1.5								X		
117	Planned Gate Time of Departure (PGTD)	1.6	P-time	X		X						Proposed Departure Time
118	Planned Position	1.6									X	
119	Position	1.6									X	
120	Progress Report Fix	1.6										X
121	Progress Report Time	1.6										X
122	Proposed Departure Time	1.6	P-time	PGTD		PGTD						X
123	Protected Area	1.5						X				
124	P-time	1.6	X	PGTD		PGTD						Proposed Departure Time
125	Receiving Facility	1.5										X
126	Receiving Sector	1.5										X
127	Relative Flight Priority (REL_FLT_PRIORITY)	1.5					X					
128	Relative Trajectory Cost (REL_TRAJ_COST)	1.5					X					

[illegible]

#	Data Element Name	Version	ICD									
			CDM	ADL	GDP/AFP	TFMDI	CTOP (SEVEN)	XFS	ASDI	ICAO FP	JCAB	CMS
145	TMI_ID	1.5						X				
146	TMI_NAME	1.5					X					
147	TOS Sequence Number (TOS_SEQ_NO)	1.5					X					
148	Total Estimate Elapsed Time (Total EET)	1.6								X		
149	Track Position	1.6							X			X
150	P-time	1.6	X	PGTD		PGTD						Proposed Departure Time
151	Trajectory Index (TRAJ_INDEX)	1.5					X					
152	Trajectory Minimum Notification Time (TRAJ_MIN_NOTIF_TIME)	1.5					X					
153	Trajectory Option (TRAJ_OPTION)	1.5					X					
154	Trajectory Option Set (TOS)	1.5					X					
155	Trajectory Valid End Time (TRAJ_VALID_END)	1.5					X					
156	Trajectory Valid Start Time (TRAJ_VALID_START)	1.5					X					
157	Type Of	1.5							X			Aircraft Type
158	Type of Flight (TYPE)	1.6								X	X	X
15	User category (USR)	1.5		X								

#	Data Element Name	Version	ICD									
			CDM	ADL	GDP/AFP	TFMDI	CTOP (SEVEN)	XFS	ASDI	ICAO FP	JCAB	CMS
9												
160	Wake Turbulence Category	1.5		Weight Class						X		X
161	Waypoints	1.6							X			